

Transitions of Care: Improving Discharge Teaching in Stroke Patients

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Dedication

This project is dedicated to my Heavenly father. It has been an honor to study the brain and learn the amazing ways it can heal and overcome from catastrophe. Thank you, Jesus, for the ability to learn and grow. This project is also dedicated to my family. Without your support, I could not have completed this journey. And finally, this project is dedicated to the many stroke victims who I have gotten to serve throughout my time as an ICU nurse.

Abstract

Approximately 13% of individuals who experience a stroke require readmission shortly after discharge due to preventable causes. A patient factor for readmission is the patient's health literacy level and stroke understanding. Improving patient health literacy through systematic discharge education significantly improves the patient's knowledge. In this quality improvement project, the author educated nurses on targeted discharge education to increase patients' understanding and attendance at follow-up appointments. In a major teaching institute in North Carolina, a targeted discharge teaching plan was prepared. Using the patient's medical history, nurses were educated on explaining to the patient their individual risk factors for a stroke and risk for a repeat stroke. The nurses were further educated on the importance of patients' attendance at their follow-up appointments and the recognition of the signs and symptoms of a stroke. Prior to the education sessions, many nurses did not believe they had any impact on patients' understanding, attendance at follow-up appointments, ability to help patients prevent a repeat stroke, or played a vital role. Following the education sessions, almost all nurses believed that they had an impact on patients' understanding, attendance at follow-up appointments, ability to help patients prevent a repeat stroke, and that nurses play a vital role. Educating nurses on targeted discharge techniques will improve the discharge education provided. Effective discharge education improves stroke literacy and can have an impact on patients' attendance at follow-up appointments.

Key words: targeted discharge education, stroke education, Transitions of Care

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Chapter One: Overview of the Problem of Interest

Transitions of care is a national healthcare initiative to effectively transition patients from hospital to home following a hospital admission. Transitions of care prepare patients for discharge after they can demonstrate safe administration of home medications, perform activities of daily living, have secured nutritional needs, and have provision to attend follow-up appointments (Alper, O'Malley, & Greenwald, 2017). Effective transitions of care prevent readmissions. According to the Centers for Medicare & Medicaid Services (2019), readmissions are costly and are not covered by CMS.

Despite efforts to perform effective transitions of care, approximately 13% of individuals who experienced a stroke require readmission shortly after discharge due to preventable causes (Bambhroliya et al., 2018). Whittington, Nolan, Lewis, & Torres, (2015) wrote that the Institute for Healthcare Improvement (IHI) encourages hospitals to optimize healthcare by (1) improving patient experiences, (2) improving patient health, and (3) reducing healthcare costs. As a result of bundled payments from CMS, preventing readmissions is paramount to the success of effective patient care. Effective transitions of care minimize hospital readmissions. Reduced readmissions are likely to result in satisfactory patient care. In addition, reduced readmissions decrease the financial burden of healthcare.

Background Information

The United States Congress created the Hospital Readmission Reduction Program (HRRP) as a part of the Affordable Care Act (CMS, 2019). The HRRP assesses penalties for hospitals that have higher-than-acceptable readmission rates (CMS, 2019); penalties result in reduced payments. Between 2010 and 2015, approximately 14% of individuals who had had strokes were readmitted within 30 days of discharge. Of those readmissions, approximately 90%

were unplanned (Bambhroliya et al., 2018). Reducing readmission rates achieves CMS goals and reduces institutional expenses.

Acute cerebrovascular disease is the leading cause of readmission within 30 days following a stroke (Bambhroliya et al., 2018). Roughly two-thirds of persons who have survived a cerebrovascular accident (CVA) are 65 years or older (Bambhroliya et al., 2018). Elderly individuals are more likely to present with multiple comorbidities (Bambhroliya et al., 2018). Patients with multiple complex comorbidities are at high risk for readmission (Jackson, Shahsahebi, Wedlake, & DuBard, 2015). Thus, these individuals require prompt, specific follow-up care (Jackson et al., 2015). According to Jackson et al. (2015), high-risk patients who received follow-up within 14 days of hospital discharge had lower rates of readmissions (approximately 19%).

Hospitals are expected to ensure that prior to discharge, the hospital has improved the patients' health and prepared patients for an effective transition to home (Whittington et al., 2015). Transitions of care planning begins as soon as a patient is admitted to the hospital. Case managers employ a multidisciplinary approach to evaluate readiness for transition. Specifically, physician or Advanced Practice Registered Nurse (APRN) assessments, physical therapist and occupational therapist care plans, and registered dietitian and nursing staff reports are compiled to ensure that patients are appropriately prepared for discharge. However, up to 14% of stroke patients still experience readmission within 30 days of discharge (Bambhroliya et al., 2018).

A multitude of factors are responsible for hospital readmissions of individuals who experience a stroke. Readmissions can occur because of patient factors, hospital factors, health system factors, complications, community support, and social factors (Caceres et al., 2017; Rennke & Ranji, 2013). Patient factors include the patient's literacy level and the patient's stroke

literacy (Caceres et al., 2017; Denny, Vahidy, Vu, Sharrief, & Savitz, 2017). Improving patient health literacy through systematic discharge education significantly improves the patient's knowledge (Caceres et al., 2017; Denny et al., 2017). Improving stroke literacy improves the patient's recognition of stroke symptoms, which reduces the incidences of secondary strokes and promotes secondary prevention of repeat strokes (Denny et al., 2017). Lack of timely follow-up and inadequate patient education at discharge remain the primary causes of readmissions (Caceres et al., 2017; Rennke & Ranji, 2013).

Significance of Clinical Problem

Due to CMS requirements to prevent hospital readmissions, hospitals are tasked to focus on finding ways to prevent readmissions (CMS, 2019). One intervention proving successful for individuals who have experienced a stroke is improving patient literacy on strokes (Caceres et al., 2017; Rennke & Ranji, 2013).

In a large academic hospital network in east-central North Carolina, patients who are treated for a stroke are being provided with stroke education packets for ischemic and hemorrhagic strokes. The education packet is provided on admission to patients and their family members, who are encouraged to read the packet at their leisure. However, prior to this project, these efforts to increase patient stroke literacy and improve patient compliance with follow-up appointments had not yet demonstrated effectiveness. Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores reflect consumer satisfaction with the care provided. According to the HCAHPS results collected by the institution for the last quarter of 2018, satisfaction with care transitions at this institution was 53.7%, which falls short of the target goal of 62.3% (E. Larson, personal communication, March 8, 2019). In addition, 13% of individuals who experienced a stroke between December 2018 and February 2019 did not attend

their scheduled follow-up appointment. Historically, the institution has been tracking follow-up with neurology but has begun tracking follow-up to a primary care provider (PCP) as a part of this project.

Question Guiding Inquiry (PICO)

In the stroke population, does a standardized discharge education process provided by bedside nurses improve patient adherence to post-hospital discharge follow-up appointments?

Population. The purpose of this project was to educate nurses on a standardized format for patient discharge education and to provide standardized discharge teaching materials to each patient who experienced a stroke, whether ischemic or hemorrhagic.

Intervention. This project focused on educating nurses on the importance of standardized discharge teaching and provided nurses with a standardized teaching format. Materials included a checklist for nurses on patient education and a patient brochure for ischemic and hemorrhagic strokes. According to Caceres et al. (2017), standardized discharge instructions improve patient health literacy and compliance with follow-up appointments.

Comparison. Prior to this project, patients received an ischemic or hemorrhagic stroke packet on admission that detailed the signs and symptoms of a stroke. Nurses were not trained to review the stroke packet with the patient during discharge education. As a part of discharge education, nurses reviewed the “After Visit Summary” (AVS) with patients, which briefly detailed the signs and symptoms of a stroke, but no education was provided to nurses for points of emphasis on discharge teaching. Nurses discussed upcoming follow-up appointments listed within the AVS with the patient; however, the nurses were not educated on teaching the patient the importance of adherence to the follow-up appointments. This project assessed nurses’ discharge education understanding and ability both pre- and post-intervention.

Outcomes. The projected outcomes of the project were to increase nurses' ability to provide effective patient discharge education for stroke patients, to create standardized discharge stroke education packets, and to increase patient compliance with follow-up appointments. Historically, data was being collected by the stroke coordinator on patient's attendance at follow-up appointments and HCAHPS scores for care transitions. This data continued to be collected throughout the project.

Summary

Persons who experience a stroke are frequently older adults with multiple comorbidities which places them at an increased risk of readmission within 30 days of hospital discharge. Readmissions are not covered by hospital payees and are expected to be prevented through effective interventions. Interventions can focus on a wide range of factors, but each intervention takes a narrow approach toward prevention. Hospitals are tasked with improving outcomes by improving patient care, improving patient experience, and reducing the burden of healthcare costs.

Most hospital readmissions for individuals who have experienced a stroke are preventable; timely follow-up and patient stroke literacy are two factors that reduce the rate of readmissions. This project educated nurses on standardized discharge education for patients who have experienced a stroke and provided a packet of information for ischemic and hemorrhagic strokes for patients at discharge. The goal of this project was to improve patient education by educating nurses in discharge teaching. The projected overarching outcome of increased nurse discharge education was to increase patient health literacy related to strokes and to increase attendance at follow-up appointments.

Chapter Two: Review of the Literature

A review of the literature was undertaken to learn the current understanding and information on discharge education. Evaluation and synthesis of the literature was performed to determine the feasibility of the intervention.

Literature Appraisal Methodology

Sampling strategies. A comprehensive review of the literature was performed through One Search, PubMed using Medical Subject Headings (MeSH) terms, Cumulative Index of Nursing and Allied Health Literature (CINAHL), and Google Scholar to identify current literature. Inclusion criteria were articles written in English, full text available online, and published in a peer-reviewed scholarly journal within the past five years (2014–2019). During the initial search, results were exclusive to stroke. Additional search terms included hospital discharge, patient education or discharge teaching, and follow-up. However, this search revealed 33 results, which were manually reviewed for inclusion. The paucity of current research available on the quality of discharge education in persons who have experienced a stroke required a widening of the search parameters.

The search was expanded to include any studies that were hospital-based and focused on discharge teaching/education. The search terms used for CINAHL and One Search were “hospital discharge” AND “patient education” OR “discharge teaching” AND “follow-up” OR “follow up” AND “readmission.” The results of this search returned 106 articles. The search of the PubMed database included MeSH search terms of patient education AND discharge AND full text AND last 5 years AND humans AND adult. The results of this search returned 178 articles. In addition, a review of the citations within articles was manually performed for inclusion. Ongoing search strategies involved alerts posted on Google Scholar which were sent

via electronic mail via push notification as publication changes occurred, occurring weekly and/or daily.

Evaluation criteria. Inclusion criteria included adult patients who were being discharged from the hospital to the home setting, with a focus on discharge teaching or patient education. Any hospital discharge study on patient education was included in the initial list of possibilities. Exclusion criteria included pediatric patients, non-hospital settings, student nurse programs based in schools not hospitals, simulation studies, and non-English-speaking patients. In addition, articles on telephone calls or other methods of communication following discharge rather than education in the hospital setting prior to discharge were excluded. Two hundred twenty-seven articles were excluded based on the described criteria. The 57 remaining articles were further evaluated for their relevance to the DNP project. Following this evaluation, 11 articles were included in the review of literature due to their focus on hospital discharges and discharge patient education. In addition, one article was found through a manual review of citations within other articles. That study employed an acute rehabilitation hospital as the location for the study but was included due to its applicability to acute hospital discharge. A literature search flow diagram is available in Appendix A. Levels of evidence varied; however, most articles were from published studies consisting of a single randomized trial or a controlled trial without randomization. According to Melnick & Fineout-Overholt (2019), there are seven levels of quality of evidence in the research literature. The highest level of evidence (level 1) is a systematic review or a meta-analysis of randomized controlled trials. One or more randomized, controlled trials is level two, while a controlled trial without randomization is a level three in research quality of evidence. An expert opinion is a level seven and is considered the lowest quality of evidence (Melnick & Fineout-Overholt, 2019).

Literature Review Findings

The overwhelming evidence from the literature review revealed that patient discharge education is a vital component of effective transition to the home environment. The research validated that patient education is a key component of the discharge process. Several of the studies posited that the quality of patient education will greatly influence patient self-care and caregiver participation in follow-up and care (Hahn-Goldberg, Okrainec, Huynh, Zahr, & Abrams, 2015; Hahn-Goldberg, Jeffs, Troup, Kubba, & Okrainec, 2018; Kang, Gillespie, Tobiano, & Chaboyer, 2018; Lin et al., 2014).

The literature provided two differing points of view on discharge education. Some of the literature supported the use of individualized education, while other literature supported standardized teaching. A summary of both theories is presented.

Targeted Discharge Teaching. Multiple studies focused on the use of patient-specific discharge education. These studies employed an intervention of discharge education tailored to individual patients. The learning needs, emotional needs, and support needs were assessed individually prior to the initiation of discharge teaching. Lin et al. (2014), used a patient-directed discharge letter (PADDLE) that enumerated the reasons for testing and follow-up care. Using the PADDLE method, Lin et al. (2014), were able to raise patient understanding of discharge recommendations to 100%.

A systematic review and meta-analysis of randomized control trials by Rushton, Howarth, Grant, & Astin (2017), indicated that self-care is a common theme in studies of individual education. The review noted that research has focused on the unique learning needs of each patient when providing individualizing education. Individualized education can use multiple modalities to meet each patient's needs (Rushton et al., 2017).

Atinyagrika, Adugbire & Aziato (2018) performed a retrospective study in Ghana that asked patients about the quality of their discharge education. Each patient received individualized discharge education, which included specific lifestyle modifications each patient could make to ensure better health. This study found that nurses were often rushed and did not educate patients as thoroughly as necessary to promote improved self-care and recovery (Atinyagrika et al., 2018).

Another model for targeted discharge teaching included the design and use of a discharge instruction form. Hahn-Goldberg et al. (2015) recruited patients, caregivers, and healthcare providers to develop a standardized discharge tool on which text fields are completed during the discharge process. Patients and nurses completed the tool together during discharge education to ensure that the patients understand new medications, follow-up appointments, and where they could get additional assistance after discharge. Patients and caregivers working together in the creation of the tool is a novel approach of engaging patients and caregivers in the healthcare system and giving ownership over their own health (Hahn-Goldberg et al., 2015).

Wiltz-James & Foley, 2019) posited that before targeted discharge teaching can begin, the nurse must first understand the patient's knowledge and beliefs. This understanding is essential in individualized discharge education. The nurse was then able to focus the education on the individual patient's modifiable factors (Wiltz-James & Foley, 2019).

Standardized Discharge Teaching. In contrast, another common theme in the literature was that of a protocol to ensure that every patient received the same high-quality discharge education. The use of a standardized process ensures that nurses are highlighting key points throughout discharge education. The standardized process guards against variations in the way

each nurse is performing discharge education. A standardized process can include a standardized form, as discussed in the previous section.

Langford et al. (2015) studied the feasibility of using an educational toolkit to enhance standardized discharge education. Patients were given a one-hour education session during the discharge process, and the intervention group received additional discharge education and follow-up education. The results of this study proved that it is feasible to enroll patients in standardized discharge education and follow-up education (Langford et al., 2015).

Kang et al. (2018) found that a standardized discharge education plan was less effective than individualized education. According to this study, when discharge education is tailored to each patient, the patient achieves a greater level of understanding of his or her health condition. Furthermore, the authors posited that readmissions are reduced when patients understand the reasons for their admission through individualized discharge education (Kang et al., 2018).

Mixed Models. In comparing targeted discharge teaching versus standardized teaching, a third model was developed within the literature. In this third model, nurses used standardized teaching but individualized it to the needs of the patient. Some studies that used an individual discharge learning tool emphasized patient needs assessment. For example, Knier, Stichler, Ferber, & Catterall (2015), developed a standardized means of assessing the patient's education level, understanding, and preparedness. Then, using a standardized checklist, the researchers ensured patient and family understanding prior to discharge (Knier et al., 2015). This method employed both individualized and standardized discharge teaching.

Caceres et al. (2017) studied the effect of a standardized, yet individualized, discharge protocol. Specifically, this study identified areas of diagnosis, medication understanding, adverse effects of medications, follow-up care, and whom to call in the event of an emergency or

worsening condition. The greatest improvement was found in the area of knowing whom to call after discharge. Patients enrolled in the intervention group improved understanding of whom to call by nearly 30%. Additionally, attendance at follow-up appointments increased by 15% in the intervention group (Caceres et al., 2017).

Limitations of Literature Review Process

Scant literature existed on discharge teaching effectiveness in preventing readmissions among persons who have experienced a stroke. Although the importance of discharge teaching was commonly discussed in the literature, few studies examined the outcomes of discharge education on improving attendance at follow-up appointments. There were insufficient quantities of Level I evidence to effectively substantiate the claims that improved discharge education promoted attendance at follow-up appointments. However, the research suggested that discharge education is a vital component in a patient's health literacy (Lin et al., 2014; McCabe, Stevens, Stewart, & Paauwe-Weust, 2018; Rushton et al., 2017). Health literacy contributes to overall compliance with the healthcare provider's recommendations (Kang et al., 2018; McCabe et al., 2018).

Discussion

Conclusion of findings. This project focused on educating nurses in using a standardized format of patient discharge education. However, expanding on results from the literature, the project also incorporated an individualized, patient-directed discharge tool. During the discharge process, nurses completed the tool with information specific to each patient, including follow-up appointments, new medications, and whom to call for concerns or questions.

Advantages and disadvantages of findings. Standardized discharge teaching ensures that each patient is apprised of their condition and correctly educated on the next steps following

discharge. Standardized discharge teaching has the advantage of being reproduced by a wide variety of trained nurses. In addition, standardized discharge teaching ensures that potential gaps in patient education are avoided. One pitfall of standardized education is that it does not consider the individual learner's needs. For example, if a patient has a less common co-morbidity, standardized discharge education could fail to provide necessary education specific to the co-morbidity.

Multiple studies supported the use of a tool tailored for each individual patient. An advantage of the discharge patient education tool is that it enhances the patient's understanding of his or her specific needs. However, the tool can be detrimental to patient discharge education because it does not allow for complete personalization of discharge education. Although standardized teaching has not always been proven successful, when coupled with an individualized letter or tool, patient understanding improves.

Utilization of findings in practice change. This project was implemented using a combination of individualized and standardized discharge education. The project trained nurses in a formal process of patient education. In addition, through the use of a patient-specific discharge tool, it highlighted information specific to each patient. The tool was provided along with oral and written discharge education. The nurse who performed discharge teaching filled out the form on the tool with the patient to engage the patient in the process. In the review of literature, patients who were involved in the discharge education process were more successful than those who were simply told about their discharge. The literature supported the use of patient-created discharge instructions (Hahn-Goldberg et al., 2015; Lin et al., 2014).

HCAHPS trends patient satisfaction with their transition of care under the category Care Transitions. With HCAHPS scores on Care Transitions being low at this institution, this project

was intended to improve performance in the care of its patients. The institution has implemented a Triple Aim policy to improve the quality of its care and the satisfaction of patients. The Triple Aim is a focus on three aspects of care: 1) improving patient satisfaction, 2) improving patients' health, and 3) reducing the cost of health care.

Summary

The results of the literature review revealed that discharge education is vital to an effective transition of care. Discharge education is best performed in an individualized yet standardized method. Individualizing discharge education allows the patient to be included in the process and provides details specific to each patient's care needs. Standardized discharge education ensures that each patient receives high-quality discharge education that ensures nurses are highlighting key points and guards against variations. Using a mixed-method model allows for the highest levels of success in discharge education.

The first Triple Aim focus is on improving patient satisfaction. By individualizing discharge teaching, patients should experience greater satisfaction with their transition from hospital to home. The second Triple Aim focus is that of improving a patient's health. This project promoted that aim by improving health literacy. Raising health literacy has been proven to engage patients in their care. When patients are engaged, they make better health decisions. Decisions such as attendance at follow-up appointments and following recommendations in discharge education are important components of engaging in positive self-care. Engaging in one's health has been proven to improve patients' outcomes. The final focus of the Triple Aim is to reduce the cost of healthcare. This project was intended to assist the institution to achieve this goal by encouraging attendance at follow-up appointments. Proper follow-up is key to preventing readmissions, which in turn reduces the costs incurred by the patient.

Chapter Three: Theory and Concept Model for Evidence-Based Practice

Before an intervention can be successful, the concepts behind it must be addressed. Each concept is important for project development. Nursing theories guide successful projects. Specifically, nursing theories are used to begin a proposed intervention that will change practice. A nursing theoretical framework structures project design. A designed project may then be applied to a practice setting through a change model.

Concept Analysis

This DNP project was grounded on concepts of health literacy, patient education, and discharge teaching. Each concept was an important component of project creation and its desired outcomes. Health literacy informs patient education. Discharge teaching is compromised if a patient lacks health literacy.

Health Literacy. In 2004, the Institute of Medicine (IOM) reported that health literacy is necessary for a patient to understand their disease process and to accept recommended treatment(s) (IOM: Committee on Health Literacy, 2004). The IOM (2004) explained that health literacy is a capacity for understanding one's basic health information and then using that information to decide for action or inaction. A person's capacity can vary across their own lifespan and is influenced by literacy, education, culture, language, and setting. Each patient brings their own background, history, understanding, and experience in the healthcare setting. Health literacy involves informing those factors toward a healthy outcome. The single greatest influence of health literacy is overall literacy (IOM, 2004). The U.S. Department of Health and Human Services (HHS) expanded on the IOM definition of health literacy. HHS defines health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information needed to make appropriate health decisions" (U. S. Department of

Health and Human Services: Office of Disease Prevention and Health Promotion, 2014). The health system's response to low literacy levels can positively influence health literacy (HHS, 2014). Response to low literacy levels includes techniques such as visual aids and verbal communication. However, the health system must identify low health literacy to correct knowledge deficits. Low health literacy affects adherence to recommendations and follow-up care (HHS, 2014). According to HHS (2014), when a health system responds to low literacy levels with visual aids and careful patient education, health literacy improved apart from overall literacy.

Patient Education. Careful patient education raises the level of patient health literacy. Patient education is a process in which patients receive disease knowledge. Patient education may be hands-on, return demonstration teaching, verbal communication, and written communication. Historically, nurses have been well-positioned to educate patients (Pilcher & Flanders, 2014). According to the National League for Nursing, nurses are educators (Pilcher & Flanders, 2014). Patient education is a primary skill in a nurse's scope of practice. Effective patient education evaluates individual literacy and health literacy. After evaluation, educators address patient knowledge gaps so that they can make informed decisions and adhere to recommendations. According to HHS (2014), health systems that used visual aids for patient education observed improvement. Denny et al. (2017) found that video-based patient education resulted in a dramatic improvement in patients' health literacy.

Discharge Education. Patient education occurs throughout the healthcare system interaction. However, patient education is most earnest during the discharge process. Discharge education is a focused session of patient instruction on their health status, the disease process, and follow-up care. During discharge education, patients are actively engaged to improve health

literacy, which results in desired outcomes. Targeted discharge education increases understanding of admission diagnosis knowledge, medication side effects, and follow-up recommendations (Caceres et al., 2017). Discharge education instructs the patient and caregiver on disease process, signs and symptoms of a worsening condition, and follow-up of care. During discharge education, nurses must listen to the patient and caregiver. Effective discharge education is as much listening as it is talking and directing (Pilcher & Flanders, 2014). The act of listening to the patient and caregiver during discharge education ensures that the nurse is aware of the patient's health literacy and can address any deficits.

Theoretical Framework

Naming the Theory. The transitional care model (TCM) developed by Mary D. Naylor recognizes that older adults with multiple comorbidities are often more poorly managed than older adults without comorbidities (Naylor et al., 1994). Poor management leads to devastating consequences (Hirshman, Shaid, McCauley, Pauly, & Naylor, 2015). The TCM incorporates 10 concepts to improve transitions from hospital to home (Naylor et al., 2018). The TCM was designed for Advanced Practice Registered Nurses (APRNs) to collaborate with patients and coordinate with other healthcare disciplines (Hirshman et al., 2015). The nine original concepts of the TCM are: screening, staffing, maintaining relationships, engaging patients/caregivers, assessing and managing risks/symptoms, educating/promoting self-management, collaborating, promoting continuity, and fostering coordination (Hirshman et al., 2015). By 2018, a tenth concept was added: delivering services from hospital to home (Naylor et al., 2018).

Categories of problems. The TCM identified six categories of problems that contribute to negative outcomes during the transition from hospital to home. The six categories are: (1) patient uninvolved in planning, (2) poor communication, (3) ineffective interdisciplinary

collaboration, (4) inadequate follow-up, (5) failure to continue care from hospital to home, and (6) gaps in care (Hirshman et al., 2015).

Discharge protocols. The TCM employs flexible, patient-specific discharge protocols to prepare patients for the transition from hospital to home. According to Naylor et al., the TCM repeatedly demonstrated improved (1) outcomes, (2) patient experiences, and (3) quality of life (Naylor et al., 2004; Naylor et al., 1994). TCM's areas of demonstrated success correspond to the Institute of Health Triple Aim goals of improving (1) patient satisfaction, (2) population health, and (3) reducing healthcare costs (Whittington et al., 2015). The TCM has been successfully incorporated for multiple health conditions. For example (Rezapour-Nasrabad, 2018), the TCM was used in patients with chronic heart disease. This case-controlled study used the TCM to prepare participants for transitions in care; participants in the control group were transitioned without specialized processing. The TCM intervention assessed patient goals and continuity of care. Study findings indicated that the TCM improved patient quality of life, especially in health promotion. Bushnell et al. (2018) used TCM to develop Comprehensive Post-Acute Stroke Services (COMPASS), which is an extension of Transition Coaching for Stroke (TRACS). Bushnell et al. (2018) employed nurses to perform targeted discharge teaching to improve health literacy. COMPASS findings suggested that the TCM permits patient-centered care while it targets specific follow-up for individuals who experienced a stroke.

Application to practice change. For project purposes, the TCM was used for patient-specific interventions that streamlined a process. The TCM standardizes the discharge process to be certain that every patient is managed throughout the transition process. This project integrated the following TCM core concepts: staffing, maintaining relationships, engaging patients and caregivers, educating/promoting self-management, collaboration, promoting continuity of care,

and fostering coordination. The TCM is built on a solid foundation of nurse-driven interventions. The project intervention was nurse-driven, which corresponded to TCM's concept of staffing. Additionally, TCM promotes APRNs as the crux of care coordination. The project site currently has two APRNs on the team with plans to add one additional APRN in the next year. Nurses promote continuity of care throughout the transition period. The TCM advocates trust relationships between nurses and patients (and caregivers) to be certain discharge education is understood. This project used TCM's concept of trust to identify learning needs and to prepare patient materials before discharge. At discharge, the nurse performing discharge education also performed an assessment of risks to include during individualized discharge instructions. The nurse discussed with the patient his or her risks for repeat stroke. Individual risks varied but included modifiable and non-modifiable risks such as obesity, smoking, use of oral contraceptive pills, and cardiac arrhythmias. The nurse also educated the patient on the signs and symptoms of a stroke during discharge education.

According to Puhr & Thompson (2015), TCM is an effective strategy for transitioning persons who have experienced a stroke from hospital to home. In educational institutes with stroke care coordinator(s), TCM is not as effective (Puhr & Thompson, 2015). The authors observed that this decreased improvement is because stroke coordinators already provide quality transitions of care. At the project site, there is a stroke coordinator, available Monday through Friday. The stroke coordinator organizes discharges and schedules follow-up appointments for each patient diagnosed with a stroke. Discharge education is performed by bedside nurses. This project's primary intervention was to improve the quality of discharge education provided by bedside nurses. This intervention's targeted outcomes were improved health literacy, patient satisfaction, and attendance at follow-up appointments. If these three areas improved, then

quality transitions of care would be achieved, which would accomplish the Triple Aim goals. The TCM concepts of collaborating, promoting continuity, and fostering coordination were met in this project. Using the integral role of the stroke coordinator and the development of a post-discharge follow-up schedule, this project provided personalized discharge education to each patient.

Evidence-Based Practice Change Model

Naming the Change Model. This was a DNP quality improvement (QI) project that was implemented in one 16-week semester. The Agency for Healthcare Research and Quality instructs that QI be systematic and structured (Agency for Healthcare Research and Quality, 2019). Additionally, AHRQ (2019) states that QI projects for improving the patient experience must focus on a single problem of interest. The FADE model was selected because it can be applied to a single problem that can be analyzed, developed, and executed within a designated timeframe. The FADE model is useful when developing a quality improvement project. The FADE model allows for focus on a single problem, analysis of the problem, development of a solution and executing the solution. The FADE model uses four steps from start to finish: Focus, Analyze, Develop, and Execute (U. S. Department of Health and Human Services: Health Resources and Services Administration, 2011). Each step of the FADE model can be revisited throughout the QI process. For example, analysis of a problem may result in the need to refocus if the problem appears to require a narrower focus. Or during the execute step of the FADE model, it might be necessary to adjust the intervention to achieve the desired outcome.

During the focus phase of FADE, the project team identifies problems and narrows the focus to a single problem of interest. Once a single problem is identified, problem verification and definition is performed. In a QI project, the focus defines a process that needs to be

improved. After focusing the QI project on a single problem, it is analyzed thoroughly, and data is collected. During analysis, the QI team identifies what is known and unknown about the QI problem of interest or process to be improved. Following analysis, a solution is developed. Planning a solution might involve assessment and choice between several solutions. Intervention selection creates the opportunity to develop an implementation plan. Lastly, an implementation team is finalized, and the intervention is executed. During this phase, the impact of the intervention is closely monitored in the QI project. The FADE model is well-suited for a QI project's single iteration but can be converted into a QI improvement cycle, i.e., continuous QI (CQI). Labovitz developed CQI for healthcare implementation after his success with the FADE model in health care (AHRQ, 2019). Using the FADE model for this DNP project left open the possibility of the project site converting to CQI and continuing to evaluate and improve discharge education following completion of the project.

Application to practice change. A thorough analysis of the problem of interest was performed in Chapter One. Problem analysis directed the DNP project to a single problem of interest. This DNP project aimed to improve the quality of discharge education among patients who have experienced a stroke. The selection of the problem of interest was based on the needs of the project site. To improve patient satisfaction scores, discharge education needed to be improved. In Chapter One, problem analysis was performed. The background of the problem was assessed, and project site-specific data collected. In chapter 2, the literature was reviewed on available interventions for improving discharge education. The intervention selected was assessed for validity based on the literature review. The literature review identified three types of patient discharge education. The literature review revealed that discharge education can be individualized, standardized, or a mixed model of standardized education and individualized

education. This DNP project utilized the mixed-model method of discharge education.

Intervention development used the FADE model to select the most promising solution. Improved discharge education provided by nurses enabled this project to achieve the Triple Aim of improving patient satisfaction, improving overall health, and decreasing costs. In the following chapters, the intervention implemented in this project and the resulting outcomes will be discussed.

Summary

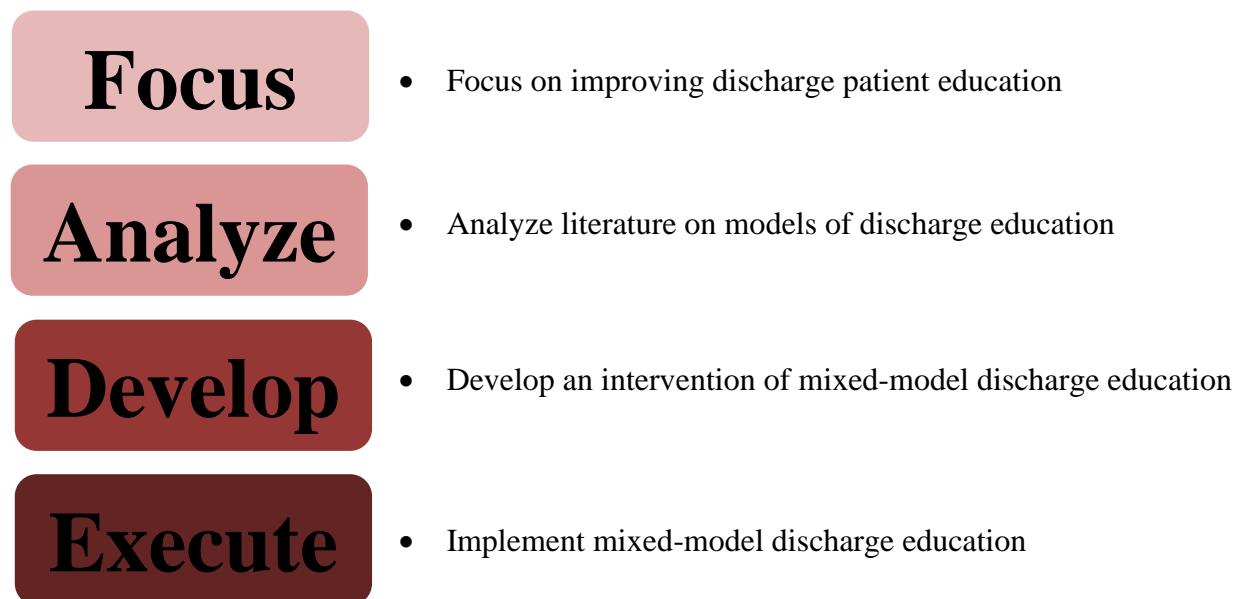


Figure 1. FADE model implemented in this project.

This DNP project was grounded on concepts of health literacy, patient education, and discharge teaching. Each concept was an important component of project creation and the desired outcomes of the project. Addressing health literacy is a requirement for effective patient education. Discharge teaching is compromised if a patient lacks health literacy. One of the primary times patient education occurs is during discharge teaching. This DNP project used the TCM to define its scope. The TCM employs Advanced Practice Registered Nurses to collaborate between disciplines for transitions in care. The TCM focuses on transitions from hospital to

home; this provided a theoretical framework for this project. The TCM engages patients in trust relationships with nurses to ensure effective discharge education is performed and understood.

This DNP project developed and implemented an intervention to improve health literacy through improved patient education and discharge teaching. Improved health literacy results in improved patient outcomes. Improved patient outcomes result in improved patient satisfaction, decision-making skills, and adherence to follow-up recommendations and decreased health care costs.

Chapter Four: Pre-implementation Plan

This chapter explains the process of developing this DNP project, obtaining approval, the IRB process, the estimated costs, and the evaluation tools. The pre-implementation process began through discussions with the site champion. Collaboration with the stroke coordinator ensured the development of a project that met the rigor of the doctoral program and the needs of the project site.

Project Purpose

The purpose of this DNP project was to educate nurses on the importance of discharge patient education to decrease hospital readmissions. The first part of the nurses' education included teaching the nurses that they are the final voice in a patient's life before they walk out the door of the hospital. Therefore, it is important that they impress on the patient the importance of follow-up care. The second part of the education focused on how to complete correct patient discharge instructions. The project assessed nurses' understanding of the importance of patient discharge education and how to perform discharge education prior to implementation. Following the education provided to the nurses, the project evaluated nurses' learning of the importance of discharge teaching and how to correctly provide discharge teaching. The project provided a refrigerator card appointment reminder, which was given to each patient with the goal of improving attendance at follow-up appointments (see Appendix D).

Project Management

Organizational readiness for change. The administration within the project site was ready for change. The project site had implemented initial patient education through an admission package. The project site implemented admission teaching, which incorporates elements of patient education necessary for discharge planning. Nurses were expected to perform

admission teaching with every hospitalization for a stroke. Each chart was audited for completion of admission teaching. Admission teaching included the patient-specific risk factors for a stroke as well as signs and symptoms of a stroke. The institution was ready to implement targeted teaching at discharge to ensure increased understanding. The staff showed readiness for targeted discharge teaching as they were already performing many of the steps during admission teaching, but not repeating the steps at discharge.

Interprofessional collaboration. The project site champion was the unit manager for the Intensive Care and Neurosciences Units. The project site champion served as a liaison with the doctoral student to ensure support, cooperation, and collaboration. The project site employs a stroke coordinator who served on the DNP project team. The stroke coordinator collected all relevant data, monitored Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores and critically evaluated each step of the project to ensure it was meeting the goals of the project site. The neurosurgery nurse practitioners (NPs) served as advisors to the doctoral student. The role of the NPs was to assess prepared discharge education and ensure key points were highlighted according to the neurologists and neurosurgeon's expectations. The stroke coordinator directly reported to the project site champion, while the NPs performed their duties independently of the site champion and were considered peers of the site champion.

Risk management assessment. A risk management assessment was performed using a strengths, weaknesses, opportunities, and threats (SWOT) analysis. The SWOT analysis revealed that the project enjoyed many strengths but identified opportunities and threats that were addressed before implementation when possible.

Strengths. Strengths included buy-in from the project site, administration support, and internal resources. The project site was well-positioned to implement this project. Since the

project site had already implemented targeted admission teaching, implementing targeted discharge teaching was a logical next step. Therefore, the project site provided project resources that filled any gaps in the doctoral student's abilities and provided unit management support.

Weaknesses. Weaknesses of the project were identified as a lack of experience with a project of this scope and the sparsity of literature to support mixed-model discharge teaching. In addition, a leave of absence left the stroke coordinator unavailable for initial planning. Therefore, the initial project design was performed between the project site champion and the doctoral student. When the stroke coordinator returned to work, she was able to offer site-specific details that had not previously been reviewed for this project. The stroke coordinator provided data from HCAHPS scores and discharge/follow-up, readmission rates.

Opportunities. Opportunities included the addition of collecting data on primary care follow-up appointments. Before this project, the site only collected data on neurology follow-up appointments. The project also provided an opportunity to evaluate if patients were completing primary care follow-up appointments. It was identified that every patient needs a primary care appointment, but not every patient needs a neurology follow-up appointment. Additional opportunities included developing a process that could be used by other sites within the institution, involvement of the entire nursing and medical team across both units, and improvement in patient outcomes.

Threats. When looking for threats against the success of the project, nurse buy-in was identified as a possible hindrance. Most nurses found themselves rushed during the discharge process and taking extra time to ensure patient understanding felt burdensome. There was the potential for newly published literature that disagreed with the project efforts. Additional threats against the success of the project included that patients might not be compliant with the

discharge education, that there existed a time constraint in the implementation period, and that the project was implemented during low “stroke season” due to better outdoor weather, exercise, and motivation.

Organizational approval process. A mutually beneficial relationship existed between the project site and the DNP student. The project was developed through this mutually beneficial relationship. The existing relationship allowed the DNP student to work closely with the stroke coordinator to identify the site-specific needs based on HCAHPS scores and collected data. The project site had noted a lack of attendance at follow-up appointments and the DNP student had noted readmissions in stroke patients. Based on these findings, the project idea was further developed with the site champion and implementation options were developed. Following these meetings, the DNP student met with the stroke coordinator to ensure the project would meet the goals of the Triple Aim where the project site currently fell short. All three of the Triple Aim goals needed to be improved upon at the project site. The three aspects of improving the Triple Aim are: 1) improving patient satisfaction, 2) improving patient health, and 3) reducing the cost of health care. The project site champion and stroke coordinator were major stakeholders in the project due to their positions within the project site. From the beginning discussions of the project, the project site leaders enthusiastically approved the project due to the project’s potential to help the organization better achieve the Triple Aim goals. Verbal approval for the project came from the Assistant Chief Nursing Officer. Final approval was signed by the site champion, who is the nurse manager on the units where the project was implemented (see Appendix C).

Information technology. The primary technology used within this project was Microsoft® PowerPoint for education and Qualtrics® for pre- and post-implementation surveys. The project site collected data through the EPIC® electronic health record (EHR) on attendance

at follow-up appointments. The use of EPIC® allowed the project site to view attendance at follow-up appointments. One weakness of the project is that the stroke coordinator could only view attendance at follow-up appointments within the EPIC® system. If a patient attended an appointment at a provider that used a different EHR, that data could not be seen.

The stroke coordinator accessed the EHR in her role within the project site. The DNP student did not collect any personal health data. The site also received data from the HCAHPS on transitions of care and satisfaction scores. The HCAHPS scores contained no patient identifiers. The DNP student received the total scores for evaluation.

Cost Analysis of Materials Needed for Project

The cost of the DNP project was minimal. The training materials and pre- and post-implementation surveys were all completed electronically. The project employed an incentive to increase participation. There were minimal out-of-pocket costs for the project (See Appendix D). The nurses were entered in a drawing for a \$25 gift card for their participation in the project and the first two nurses to complete the initial survey received a \$10 coffee gift card. One ream of cardstock was purchased for the refrigerator appointment reminder card. The site champion, stroke coordinator, nurse practitioners, and nurses who were involved in the project did not incur extra working hours. There were no other project expenses. The potential savings of the project were not realized within the timeframe of the project.

Plans for Institutional Review Board Approval

The project site maintains an Institutional Review Board (IRB) coordinator and the project was submitted to the institution's IRB compliance officer. However, this DNP project focused on quality improvement and did not include human subjects. The compliance officer approved the project and the project site champion signed off on the project following a

discussion with the Assistant Chief Nursing Officer (see Appendix C). The DNP student completed the East Carolina University (ECU) IRB, approval checklist process using the Quality Assessment worksheet. The IRB QI/Program Evaluation Self-Certification Tool was reviewed by the DNP faculty lead. Following review by lead faculty of the IRB Quality Assessment worksheet, approval was received to submit to the Qualtrics link for ECU IRB approval. An immediate response determined that the project was a quality improvement project and did not require IRB approval (See Appendix F). The project does not involve any patient interaction.

Plan for Project Evaluation

Demographics. No patient demographic data was collected during the project. The project focused on educating nurses and limited, non-sensitive demographic data was collected on nursing staff. When completing the pre- and post-implementation survey, each nurse created a unique identifier that was used for the incentive drawing. However, data on the unique identifier was not collected or attached to individual nurses, maintaining anonymity. Additionally, the project collected nurse data concerning years of nursing, gender, and age range. No personal identifying information was collected and no health information was collected.

Outcome measurement. The purpose of this project was to improve nurses' ability to perform discharge education on stroke patients correctly. The outcome measured was nurses' understanding of proper discharge teaching pre- and post-intervention. Using a Likert scale, nurses were assessed on their knowledge prior to the electronic training. Following the training, nurses were assessed using the same Likert scale (see Appendix G). The targeted discharge teaching and refrigerator appointment reminder card became a permanent part of staff policy and procedures and was added to the required annual training. The stroke coordinator continued to collect data on HCAHPS scores and readmission rates throughout the implementation period.

Evaluation tool. The survey that each participant completed pre- and post-implementation used a Likert scale (see Appendix G). The evaluation tool was used to assess nurses' understanding of the discharge education process and the education provided in the project. The evaluation tool assessed nurses' willingness to change and include the new discharge education teaching in their discharge process. The tool was created expressly for this project. No statistical data was collected, and the tool was only valid for this project.

Data analysis. An analysis of pre-implementation and post-implementation survey results was completed by comparing the responses by nurses of their understanding prior to the education and following education through the pre- and post-implementation Qualtrics® surveys. Responses to the surveys were recorded and analyzed using Qualtrics® and the results output in a graph (see Appendix I).

Data management. Data was collected and analyzed from the Qualtrics® surveys. Non-sensitive data from the Qualtrics® survey was downloaded to Excel and entered on the DNP student's personal computer, which is password protected. Project data was deleted off the computer following completion of the project. No paper data or personal information was collected.

Summary

The pre-implementation phase of this project focused on developing a plan to educate nurses and assess their increase in understanding. The project was developed through a mutually beneficial relationship with the project site. Using HCAHPS scores and data which was collected at the institution, the stroke coordinator, site champion, and DNP student were able to identify a lack of attendance at follow-up appointments. Identifying this gap enabled a narrow focus for

the project. Both the site champion and stroke coordinator saw the need to improve patients' understanding of follow-up care through improved discharge education.

The project built on current admission education, which targeted stroke patients and identified their personal risk factors. The project built on this education by highlighting individual patient risk factors and emphasizing the importance of follow-up care in discharge teaching. In addition, a refrigerator appointment reminder card was developed and implemented through the project. This card reminded patients of upcoming follow-up appointments and contained a checklist of their modifiable and non-modifiable risk factors. The site leadership was immediately enthusiastic about the project and provided support throughout the pre-implementation phase.

The risk assessment revealed areas for improvement and areas of strength prior to implementation. The project enjoyed a high level of project site support, which provided many strengths and opportunities for the project. Threats and weaknesses against the project were minimal but were important to note. Because of the strong buy-in from the project site, nurses were better prepared to accept the teaching and implementing the refrigerator appointment reminder card.

The project involved only minimal costs, primarily the \$45 cost of the incentives. The IRB process revealed that this DNP project met the qualifications for a quality improvement project and did not require IRB review. No materials submitted for approval were changed following approval. The project involved minimal risk with no patient data collection. Demographic data collected from the nurses was non-sensitive and contained no identifying information.

Chapter Five: Implementation Process

This chapter provides details on the specific strategies involved in the implementation process. Chapter details include the setting, participants, recruitment, and implementation plan. Any changes made to the implementation plan are discussed in this chapter.

Setting

The project took place at a private Magnet® recognized hospital in the Triangle area of North Carolina. Stroke was the third leading cause of death between 2012-2016 in the county where the hospital is located (Petteway & Ledford, 2017). Part of a large private university health system, the hospital has 186 inpatient beds and serves patients with any disease or health issue for ages 13 through end-of-life. The project took place in a 15-bed Intensive Care Unit (ICU) and a nine-bed Neurosciences Unit (NSU). The institution is funded by insurance reimbursement plus patient payments for services as well as the donations of private benefactors. As the only advanced thrombectomy-capable stroke certified hospital in the state, the project site is working hard to ensure they continue to meet the rigorous standards of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). The institution was interested in the project because it assisted to better achieve Triple Aim goals. The project site viewed the project as the logical next step to changes that were previously implemented for admission teaching. Adding targeted discharge teaching followed a similar course as targeted admission teaching previously implemented within the project site.

Participants

The DNP project participants were 82 registered nurses (RN) who worked in the ICU and NSU at the project site and were responsible for discharge teaching. All RNs were invited to participate regardless of full-time or part-time employment, years of service, or experience.

Advanced Practice Registered Nurses were excluded from participation because they do not perform discharge education. Participation was voluntary and each participant self-selected to participate. Prior to the DNP project, the discharge summary included a statement advising the patient to follow-up with a primary care provider within two weeks. APRN's participated in the project by changing the discharge order set to include an order for the HUC to schedule a follow-up primary care appointment prior to discharge.

Recruitment

Participants were electronically mailed a link to complete a pre-implementation survey. Each RN was encouraged to participate, but participation was not required. Participation in the project was entirely voluntary. However, using frequent electronic mails and an incentive drawing, the DNP student achieved 60% participation overall. No RNs were excluded except those working in an advanced practice role (Nurse Practitioners and Clinical Nurse Specialists).

The RNs on the units had some project fatigue from a multitude of other projects at the institution. However, there was greater participation in this project due to the mutually beneficial relationship which existed before the project. The RNs were more accommodating and willing to participate because they had been provided a vision for the project before implementation. Through the mutually beneficial relationship, vision and clarity were provided before implementation in the form of personal communication and requests for feedback on project design and educational needs. Allowing the RNs to provide input as the project developed ensured that they were more willing to participate during implementation. RNs on the unit expressed frustration that previous projects had huge time commitment requirements that made the projects less accessible. As a part of working with the RN's, the pre- and post-implementation surveys were kept short to encourage participation. In addition, the education

was performed via a PowerPoint® through electronic communication so that nurses were not required to attend education sessions.

Implementation Process

Pre-Intervention. The project was implemented over 10 weeks beginning in September 2019 and continuing through November 2019. One week before implementation, the RNs were sent an electronic mail notifying them that a DNP project would begin on their units the following week. The email provided brief details about the project, the scope of the project, voluntary participation, and the incentive drawing for participation. The week implementation began, the RNs were sent an email containing a link to a Qualtrics® survey tool (see Appendix G). The RNs were given two weeks to complete the pre-implementation evaluation survey tool, which assessed their prior knowledge of discharge education. During the pre-survey, the nurses were asked to create a unique identifier to track their completion of each of the three stages. The unique identifiers were anonymous.

Intervention. Following the initial two-week period, the RNs were then emailed the PowerPoint® education (see Appendix H) and provided the refrigerator appointment reminder card (see Appendix E). The RNs were allowed six weeks to review and study the education materials. The refrigerator appointment reminder card was printed and provided to each hospital unit clerk (HUC). The HUCs were responsible for creating the discharge packets for the RNs.

Post-Intervention. At the end of the six-week education period, the same evaluation survey tool was again sent to each RN. The RNs were allowed two weeks to complete the same survey tool to assess their understanding of the teaching. Participation was tracked through a unique identifier that each RN created when completing the pre-implementation survey. The RNs then used this same unique identifier when completing the post-implementation survey. At

the end of the 10-week implementation period, a drawing was held for RNs who completed the pre-implementation, education, and post-implementation survey. Participation in the surveys was completely anonymous.

Plan Variation

Changes to the implementation plan focused primarily on encouraging participation by the nurses. Originally the plan was to implement across six weeks, allowing two weeks for each stage: pre-survey, education, post-survey. After consultation with the DNP advisor, the education phase was extended to a six-week time period to allow nurses more time to complete the education and increase participation. Changing the education stage to six weeks also allowed the DNP student more time to interact with the project site and provide one-on-one and group teaching and answer questions. The DNP student availed herself during the education stage to walk nurses through the education and answer any questions that arose. During those site visits, the DNP student was able to observe targeted discharge teaching and use of the refrigerator appointment reminder card.

Another change made to the implementation plan to encourage participation included the use of added incentives. Originally, the plan was to provide a \$10 coffee gift to the first nurse who completed the pre-survey. The plan was modified to give a \$10 coffee gift card to the first nurse from each shift who completed the pre-survey and the post-survey, thereby giving out a total of four \$10 coffee gift cards. This increased the cost of the project by \$30 (See Appendix D). During the pre-survey stage, nurses were quick to complete the pre-survey and compete for the coffee gift card. However, during the post-survey, only four nurses completed the survey on the first day.

Following the end of the education stage, the DNP student provided bags of candy to both units to thank the nurses for their on-going participation. During the site visit when candy was provided, the DNP student visited with each charge nurse to thank them for discussing the education and refrigerator appointment reminder cards during morning huddles. The cost of the candy was \$10 which was not included in the previous budget (See Appendix D).

During the implementation, another change occurred when the stroke coordinator was promoted to a director position and no longer had time to assist the DNP student with HCAHPS scores, collecting patient data, or providing information on readmission/follow-up rates. The DNP student was only able to collect data on August and September attendance at follow-up appointments, rather than throughout the entire implementation period. There was a time period of approximately eight weeks where the previous stroke coordinator was promoted and had not yet been replaced. At the end of the education stage, the new stroke coordinator began and was immediately enthusiastic about the project. Because the stroke coordinator was listed on the appointment reminder card as a point of contact, the card was updated when the new stroke coordinator began working. A second ream of cardstock was purchased for reprinting with the new information. This increased the budget by \$13.97 (See Appendix D). One other change made to the materials was adding the selection of “day shift/night shift” to the post-survey to facilitate easy identification of coffee gift card winners.

Summary

The project took place in the Triangle region of North Carolina at a Magnet® recognized hospital. The project site was ready to change its discharge education process, similar to changes that had been implemented to their admission education process. The project site recognized that targeted discharge teaching would help them better achieve the Triple Aim goals. Participants in

the project were self-selected and voluntary. RNs in the ICU and NSU who performed discharge teaching were encouraged to participate.

The project was implemented in ten weeks from September to November 2019. During that time each RN was electronically mailed a link to a pre-implementation survey, a PowerPoint® on targeted discharge teaching, and a post-implementation survey. The survey was created using Qualtrics® and the same survey used for both pre- and post-implementation to assess an increase of understanding. Each RN who participated and completed both the pre- and post-implementation survey and education stage was entered in an incentive drawing for a \$25 gift card. No personal data was collected on RNs and the surveys were anonymous. Changes were made along the way to increase participation. Nurses had the opportunity to complete the pre-survey and post-survey and compete for a \$10 coffee gift card. Adding the \$10 coffee card incentive encouraged the nurses to complete the pre- and post- surveys sooner with the hope of being the first nurse on their shift to complete the survey.

Chapter Six: Evaluation of the Practice Change Initiative

Following the quality improvement implementation, an analysis was completed to evaluate the project and key outcomes. The data collected from the project implementation required analysis to be meaningful. This chapter presents an analysis of the data collected pre- and post-implementation, a description of the participant demographics, and a review of the project findings. The data presented in this chapter can be used to impact future quality improvement initiatives related to targeted discharge education at this facility.

Participant Demographics

The pre- and post-implementation survey was sent to every nurse on the Intensive Care (ICU) and Neuro Step-down (NSU) units. A total of 82 nurses were invited to participate in the survey ($N=82$). All nurses were sent a Qualtrics® survey that contained three demographics questions in addition to the quality improvement intervention knowledge questions. Participants were asked for their age in years, their experience as a nurse in years, and their gender. Each question in the demographics section required an answer. Participants manually typed their age and experience as a number and selected gender from a list.

The overall population of male nurses in the unit is 15% ($n=13$). Male nurses represented 13% of the participants in the pre-survey ($n=6$). However, in the post-survey, less than 1% of the participants were male ($n=2$). Male participants were on average younger and less experienced nurses. The age range of the nurses was from 25 to 55 years and experience ranged from 1 to 15 years. Overall, participation in the pre-survey was 59% ($n=49$), while participation in the post-survey was only 28% ($n=23$). Participation during the implementation phase was 36% ($n=30$). No demographic data was collected during the implementation phase.

Table 1

Pre-Implementation Survey Demographics (n=49)

	Average Age	Average Experience	Gender Totals
Female	33.1	6.2	43
Male	31.8	4.8	6
Grand Total	33	6.125	49

Table 2

Post-Implementation Survey Demographics (n=23)

	Average Age	Average Experience	Gender Totals
Female	34.5	6.2	21
Male	37.5	4.5	2
Grand Total	34.8	6.1	23

Intended Outcomes

The outcomes for this Doctor of Nursing Practice (DNP) quality improvement (QI) project included short-term, intermediate, and long-term outcomes. The short-term outcome was to develop targeted discharge education for the nurses to use when discharging patients who had been hospitalized for a stroke. During summer 2019, this outcome was achieved as the targeted discharge education was written and developed into a PowerPoint® presentation for nurses.

The intermediate outcome of the DNP QI project was that during the implementation period, nurses understood the importance of targeted discharge education and correctly performed targeted discharge education on patients who were being discharged following a stroke. The intermediate outcome was assessed through pre- and post-implementation Qualtrics® surveys. The intermediate outcome was achieved during Fall 2019 through the implementation period.

The long-term outcome of the project is the overarching purpose of the DNP QI project: to increase patients' attendance at follow-up appointments at both neurology and primary care providers and decrease 30-day stroke readmissions. The long-term outcome cannot yet be assessed because many follow-up appointments are 14 days to three months following discharge. The stroke coordinator at the project site continues to collect data on readmission rates and attendance rates at follow-up appointments. Long-term, as the nurses continue to use targeted discharge education on patients who have experienced a stroke, the literature supports that readmission rates should decline and attendance at follow-up appointments should improve.

Findings

The DNP QI project focused on using the current evidence in the literature to incorporate targeted discharge teaching for stroke patients. This project evaluated nurses for their understanding of the importance of targeted discharge teaching and understanding of correct methods. Prior to implementation, the nurses were surveyed using a Likert scale to assess their understanding of their role and the patient's role. The pre-implementation survey results revealed that the nurses almost unanimously agreed that patients need to attend follow-up appointments, know their individual risks for a stroke, need to know the warning signs of a stroke, and that patients who have had a stroke are at risk of a repeat stroke. However, the pre-survey revealed that nurses did not recognize the power of their own voice in a patient's life. Through the DNP QI project, the nurses' understanding increased positively following the education period. Pre-implementation and post-implementation surveys were graphed to display visual results of the improved understanding (see Appendix I). Pre-implementation, 28% of nurses were neutral or somewhat agreed that they were the final voice in a patient's life prior to transition home and that nurses have the ability to help the project site institution achieve the Triple Aim. Following

the intervention, understanding of these two categories improved to 65% completely agree that nurses are the final voice in a patient's life prior to transition home and nurses can help the project site achieve the Triple Aim. Only 18% of nurses believed they can help prevent a repeat stroke prior to implementation; following implementation, 43% of nurses completely agreed that they have the ability to prevent a repeat stroke through targeted discharge education. The pre-implementation survey revealed that only 39% of nurses believed they must impress on patients the need for follow-up care and that nurses have a vital role in patients' compliance with follow-up care. Following the DNP QI project implementation, the post-survey revealed that 83% of nurses understood the need to impress on patients the need for follow-up care and that nurses play a vital role in patients' compliance with follow-up care.

Summary

The DNP QI project met short-term and intermediate goals. Targeted discharge education was written and provided to the nurses as a short-term goal. The intermediate goal of the project was met by educating nurses on the importance of targeted discharge teaching and how to correctly perform targeted discharge teaching. The long-term goals of the project cannot yet be actualized. However, as data continues to be collected, the project site should see a reduction in the frequency of 30-day readmissions and an increase in attendance at follow-up appointments at primary care and neurology.

The pre-survey revealed that the nurses strongly agreed on the importance of the patient's role in their health outcomes. The nurses responded completely agree on nearly every question related to the patients. The project findings revealed that pre-implementation, nurses were neutral or somewhat agreed on the importance of their role in discharge education. The project focused on educating nurses on correctly performing targeted discharge teaching but also on the

importance of the nurses' role in targeted discharge education. Following implementation, the post-survey revealed that nurses better understood the importance of their role in targeted discharge education and their ability to positively influence patients' compliance with follow-up care. Following the DNP QI implementation period, 83% of nurses recognized the importance of their voice in a patient's life and that nurses can positively impact patients' attendance at follow-up appointments.

Chapter Seven: Implications for Nursing Practice

The American Association of Colleges of Nursing (AACN) identified eight *Essentials for Doctor of Nursing Practice* (DNP) students that must be achieved to qualify for graduation. This chapter will detail the AACN Essentials and how each one is applied to this DNP project.

Practice Implications

The eight AACN Essentials establish standards of quality for nursing education. These eight Essentials shape the education of Advanced Practice Registered Nurses (APRN) and guide the outcomes of any DNP program. The AACN Essentials I-VIII provide direction for DNP students and shape future clinical practice. The AACN Essentials are the backbone for the DNP project and ensure the DNP student achieves a baseline measure of understanding academic preparation.

Essential I: Scientific underpinnings for practice. Essential I focuses on analytics, integration, and translation of research or theory (AACN, 2006). This DNP project began with a discovery of the background of the problem, included a thorough review of literature, and applied a theoretical framework to the quality improvement (QI) project. Using current evidence-based practice and literature, the QI project was developed to improve patient attendance at follow-up appointments. Analyzing the current project site data and translating evidence-based research into practice became the scientific framework for the QI project. As an example, the DNP project found extensive literature that revealed that patients who receive targeted discharge teaching are more likely to attend follow-up appointments after hospital discharge.

The DNP project used the Transitional Care Model (TCM) as the theoretical basis for the DNP QI project. The TCM advocates trust relationships between nurses and patients to ensure discharge education is understood. This project used TCM's concept of trust to identify learning

needs and to prepare patient materials before discharge. Using the theoretical framework of the TCM allowed the DNP student to successfully incorporate theory into the translation of research for the development of the QI project.

Implications for practice from Essential I include integrating data from current patients, outcomes, clinical practices, and analyzing the data to adopt change for quality improvement. As a future DNP, it is important to carry forward Essential I into clinical practice by always looking for theoretical models that can be used to improve current practice.

Essential II: Organization and systems leadership for quality improvement and systems thinking. Essential II focuses on the DNP student applying research and systems thinking into clinical practice and advocating for change within systems (AACN, 2006). Additionally, Essential II focuses on using a change theory to implement innovations for change (AACN, 2006). This DNP project used the FADE model to incorporate change into the existing discharge education plan. Using the FADE model allows the DNP student to innovate change at each step of the project process. Because this DNP project had three outlined steps of pre-implementation, education, and post-implementation, the DNP student was able to use FADE effectively to change the discharge education process. If iterations of the implementation had been performed, the FADE model is designed for conversion to continuous QI.

Another way in which this DNP project met DNP Essential II is by effectively communicating practice knowledge. Essential II focuses on the DNP student's ability to communicate knowledge to the project site and participants using both oral and written skills (AACN, 2006). The DNP student communicated the application of research and the quality improvement process through Microsoft® PowerPoint®, e-mail, and personal site visits. Nurses were evaluated throughout the implementation period by the site champion and were able to

clearly and concisely verbalize back the goals and purpose of the DNP project. The nurse's ability to verbalize understanding demonstrates a clear achievement of DNP Essential II.

Essential II implications for practice demonstrate the need for change and improvement continuously. Essential II teaches the DNP student to plan for change and plan methods for change. Using cycles of change, such as the FADE model or a Plan-Do-Study-Act cycle, ensures the future DNP is not stagnant.

Essential III: Clinical scholarship and analytical methods for EBP. Essential III focuses on the use of literature to analyze evidence-based practice and create a process to improve patient outcomes (AACN, 2006). This DNP project began with a thorough review of the literature using the Cumulative Index of Nursing and Allied Health Literature (CINAHL) and PubMed. Following the literature review, alerts were created in Google Scholar to notify the DNP student of newly published literature pertaining to the DNP project. This ensured the DNP student continued to focus on the most current evidence-based practice.

Essential III instructs the DNP student to create processes to evaluate the success of quality improvement strategies to promote safe and effective care (AACN, 2016). To meet this part of DNP Essential III, the DNP student used pre- and post-implementation testing to evaluate the knowledge of the nurses who participated. Each nurse was invited to complete a pre-implementation survey that quizzed their understanding of both nursing influence and patient factors on attendance at follow-up appointments. Following the nursing education and implementation of the targeted discharge teaching, the nurses were again invited to complete a post-implementation survey that assessed new knowledge and understanding.

Implications for practice from Essential III are the need for continually staying up to date on the latest research and literature. The DNP student must subscribe to current journals, set up

alerts on scholarly sites, and also focus on data trends. Using pre- and post-implementation surveys will ensure the DNP is appropriately assessing change as it occurs.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare. DNP Essential IV focuses on the use of technology for analyzing outcomes and improving patient care (AACN, 2006). The stroke coordinator was able to extract data for the DNP student using the Electronic Health Record (EHR). The stroke coordinator added the DNP student to the clinical list in the EHR so that the DNP student was able to see how many patients were currently being treated for a stroke. The neurologist completing the discharge orders was asked to order the hospital unit clerk to schedule follow-up appointments with primary care providers rather than telling the patient to follow-up. Using the EHR facilitated smooth access to ensure patients were being scheduled for follow-up appointments.

The DNP project also used Microsoft® PowerPoint®, Microsoft® Excel®, and Qualtrics® to disseminate the project surveys, education, and outcomes. The Qualtrics® surveys were extracted to Microsoft® Excel® and compiled using a run chart. A diverging stacked bar chart was used to display the nurses' understanding of both pre-implementation and post-implementation. The use of technology was carefully evaluated throughout the project to ensure confidentiality was maintained.

Essential IV implications for practice ensure that the DNP will use technology to work smarter and be better informed. The use of technology is critical for the DNP in practice; it reduces workload and provides timely access to data.

Essential V: Healthcare policy for advocacy in healthcare. DNP Essential V focuses on advocating for nursing policy to stakeholders, analyzing policy, and advocating for best

nursing practices (AACN, 2006). The DNP student met with key stakeholders prior to the implementation of the QI project and again throughout the implementation phase. Meeting with key stakeholders ensured that the project aligned with the policy of the project site. The DNP project used existing discharge education policies in the institution and expanded on the policy to ensure targeted discharge teaching was being performed. Although the DNP student did not affect policy change but rather strengthened existing policy, the project has the long-term potential to modify the existing policies for discharge planning and education. During the implementation phase, meetings with the hospital neurologist allowed the DNP student to advocate for policy changes in discharge education. Dissemination of the policy change ideas included electronic mail and in-person communication with the advanced practice registered nurses.

Implications for practice for Essential V can be state-level, systems-level, or clinic-level. At each level, the DNP must identify policies that are in place and ensure they are being upheld or modified as appropriate. The DNP is an advocate for policy change to meet the ever-changing needs of the population.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes. DNP Essential VI focuses on the DNP student's ability to communicate with many disciplines and effectively collaborate and lead an interdisciplinary team (AACN, 2006). The DNP project engaged registered nurses, neurologists, neurosurgeons, advance practice registered nurses, hospital unit clerks, and hospital management to achieve the project goals. Communication between all members of the team was essential because some team members had little to no medical training while other team members had extensive medical training. Ensuring that the entire interprofessional team recognized the value of the other participants was

necessary for success. The DNP student used written and verbal communication to discuss expectations, goals, outcomes, and diversity. The DNP student also worked intra-professionally with many of the registered nurses in the Intensive Care Unit (ICU) and Neurosciences Unit (NSU). Collaborating with nurse peers allowed the DNP student to create better buy-in for the quality improvement process.

Implications for practice for Essential VI are that the DNP must never work in isolation. By collaborating with other groups, teams, or individuals, the DNP is better able to meet healthcare needs. The DNP is mandated to collaborate and lead teams to better achieve healthcare goals.

Essential VII: Clinical prevention and population health for improving the nation's health. DNP Essential VII focuses on the use of data and statistics to synthesize information and establish a strategy to improve quality (AACN, 2006). DNP Essential VII also mandates the use of change strategies for improving outcomes (AACN, 2006). The DNP project met DNP Essential VII by beginning with a review of the current Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores. Following the assessment of HCAHPS scores, the DNP student was able to identify areas of weakness and synthesize the information to create a quality improvement strategy. The DNP quality improvement project focused on improving the health of patients who had experienced a stroke by engaging the nurses in targeted discharge teaching. The DNP project helped the organization to achieve the Triple Aim. The Triple Aim is a focus on three aspects of care: 1) improving patient satisfaction, 2) improving patients' health, and 3) reducing the cost of health care (Whittington, Nolan, Lewis, & Torres, 2015). The DNP student used targeted discharge teaching to highlight individual risk factors to focus patient attention on their own health and modifiable ways to improve.

Essential VII implications for practice remind the DNP student to focus on population health. When a DNP is aware of the health of a community, county, or even the clinic population, he/she is better able to devise a plan to improve health and achieve healthy outcomes. A key implication for practice is to identify areas of weakness and find solutions for improvement. There are scorecards, metrics, HCAHPS scores, county health goals, state health goals, and Healthy People 2020 goals that the DNP has at his/her disposal and can use to assess strengths and weaknesses.

Essential VIII: Advanced nursing practice. DNP Essential VIII focuses on systematic assessment using biophysics, behavioral, cultural, psychosocial, and economic competencies (AACN, 2006). DNP Essential VIII mandates that the DNP student must provide support and mentorship to fellow nurses. This DNP project focused on supporting and educating nurses in the ICU and NSU. Throughout the implementation period, the DNP student was available to answer questions, provided feedback on the use of the refrigerator appointment card, and meet one-on-one with nurses to ensure understanding of targeted discharge teaching.

DNP Essential VIII focuses on the need to implement interventions and evaluate those interventions. The DNP project focused on targeted discharge teaching and evaluated the nurses' understanding of discharge teaching. During the implementation phase, the DNP student rounded on each unit and assessed the use of the refrigerator appointment reminder cards and evaluated the placement of the cards. The DNP student collaborated with the unit manager and charge nurses on the placement of the refrigerator appointment cards to ensure use. The DNP student added the refrigerator appointment reminder cards to the staff huddle boards to ensure that at each shift change, the charge nurse would remind the nurses of the DNP project and ensure the use of targeted discharge teaching.

The implication for practice from Essential VIII is the need to use interventions throughout practice. Using all the assessment skills available, the DNP will be more successful at a systemic assessment. The DNP must build into practice, a plan for mentorship of students and new graduates.

Summary

The AACN DNP Essentials provide the backbone for the DNP project. The eight AACN Essentials are the standards that each DNP program must employ in educating the doctorally prepared candidate. The AACN Essentials also shape the future practice of the DNP student. Implications for practice of Essential I encourage the DNP to be looking for theoretical models that can be used to improve current practice. Essential II implications for future practice are planning to change and using cycles to achieve quality improvement. The implication for practice of Essential III is the need to stay abreast of current research and literature. An implication for future practice for Essential IV is that the DNP must plan for technology and use it to be efficient. Essential V implications for practice are the need to be involved in advocating for policy adherence and change while promoting best practice. The implication for practice for Essential VI is that the DNP must plan to collaborate to achieve healthcare goals. Essential VII implications for practice are that the DNP must identify areas of weakness and work to find solutions in population health. Essential VIII implications for practice are the need for systematic assessment and on-going mentorship.

Chapter Eight: Final Conclusions

This chapter will detail the overall significance of the DNP QI project. The findings of the QI project have significance for nursing practice as well as implications for financial improvement at the project site. This chapter will discuss the project limitations and strengths as well as the implications for future practice.

Significance of Findings

The clinical significance of this DNP QI project is that targeted discharge education can improve transitions of care and patient outcomes. Transitions of care prepare patients for discharge after they can demonstrate safe administration of home medications, perform activities of daily living, have secured nutritional needs, and have provision to attend follow-up appointments (Alper et al., 2017). Effective transitions of care prevent readmissions. According to the Centers for Medicare & Medicaid Services (2019), readmissions are costly and are not covered by CMS. This DNP QI project demonstrated that nurses can have a positive impact on a patient prior to discharge. The QI project evaluated nurses' understanding of the importance of their role in a patient's life. By using targeted discharge teaching, nurses were trained to understand that their role can have a positive impact on the patient outcomes, as well as the patient's adherence and understanding of follow-up care. Improving patient's adherence and understanding could improve the transitions of care satisfaction, as well as help the institution achieve the Triple Aim. The significance of targeted discharge teaching is that patients will be more likely to adhere to follow-up recommendations. This DNP QI project found that nurses could become confident in their role in a patient's life and educate the patient to adhere and follow-up appropriately. When nurses are confident in their role, they approach targeted discharge teaching with confidence and thereby gain patient trust.

Project Strengths and Weaknesses

A strength is that the project site was committed to change and prepared to implement an intervention that would improve patient outcomes. The project had administration support and buy-in from the outset. Through the administration support, the project was able to be promoted during morning and evening huddles, on key communication boards, and nurse-to-nurse during hand-off reports. The project site employed a stroke coordinator who worked to collect data on attendance at follow-up appointments prior to the implementation of the project. Immediately prior to the implementation period, a new neurologist began seeing patients in the neurology clinic for follow-up from hospital discharge. Having a dedicated provider following-up with discharged patients had the potential to increase attendance at follow-up appointments because more appointment slots were available.

Another strength is that the project cost very little to implement but has the potential for huge cost-savings benefit to the project site by potentially preventing costly stroke readmissions. The project could be implemented for minimal cost, however additional incentives were employed to increase participation.

And finally, the project was engineered to be self-running, which would allow for roll-out to other floors without a large time commitment from the stroke coordinator or administration. As the project is trialed on other floors, the project could be discussed during morning/evening huddle without an administrator or stroke coordinator present. The project is designed so that the shift charge nurse could remind nurses to complete targeted discharge education and each nurse would be responsible for their personal training through reading the educational electronic mail created using PowerPoint®.

A weakness identified in the project is that the stroke coordinator was unable to collect data on attendance at primary care follow-up appointments. This occurred for a variety of reasons: patients did not have a primary care provider, patients did not use a primary care within the project site institution, or follow-up appointments were not reported until the patient attended a neurology appointment. Most neurology appointments occurred up to three months following discharge; this limited the ability to track if patients were attending a primary care appointment within two weeks of hospital discharge as recommended.

Project Limitations

A limitation of the project is that many of the nurses did not complete all three stages of the DNP QI project. This limited the scope of the project as it was difficult to assess how many nurses understood the importance of targeted discharge education and were performing it with each stroke patient.

Another limitation is that the project was completed in a short time span, which did not allow for a follow-up evaluation of long-term outcomes. The long-term outcome of the project is to prevent readmissions; however, readmission data typically is not available for 90 days or more following a single month of collection. If the project were to be completed again, removing the time constraint and performing the project over three to four months with data collected during that period and for the following three to four months, it would improve understanding of the significance of the project. Additionally, through studying the time frame of the project and the time following the project, the project site could hopefully see a decrease in readmissions for strokes.

Project Benefits

One project benefit of the DNP QI project was improved understanding in the nurses of the importance of their role in a patient's life. Prior to the project, nurses did not believe they could have a positive impact on patient outcomes and adherence to recommended follow-up. The intervention led to an increase in nurses' understanding and ability to perform targeted discharge teaching. The DNP student observed that nurses performed targeted discharge education and noted that nurses were more confident armed with the knowledge that their voice matters in a patient's life.

This DNP QI project revealed that targeted discharge education can be performed by nurses without added costs to the institution. The cost of the project is minimal. Training materials are published electronically, and pre- and post-implementation surveys are all completed electronically using a freely available web-based survey tool. Educating the nurses was completed individually by each nurse through PowerPoint® education materials. The refrigerator appointment reminder card can be printed by the institution using existing office supplies. At the project site, if the nurse's education project continues, it could be included as a part of the annual training nurses complete and as a part of new-hire educational materials. Inclusion of the nurse's education, during existing educational periods, should not incur additional costs for the project site.

Another project benefit is the potential for savings to the institution. According to Posten (2018), stroke care costs approximately \$34 billion annually for all cases in the United States. The average cost for a single hospital admission, first-time stroke, is \$18,000-21,000 (Posten, 2018). In a retrospective study by Johnson, Bonafed, and Watson (2016), the average cost for a readmission is \$12,000. According to Hines, Barrett, Jiang, and Steiner (2014), the total annual

cost to Medicare and Medicaid of cerebrovascular disease readmissions is more than \$568 million. Of note, the report does not break down the cerebrovascular disease subtypes and it is based on data from 2011 that has not yet been updated or republished for more recent fiscal years. Using the United States Department of Labor (2019) inflation calculator, if the cost of readmission averaged \$12,000 in 2016, the average cost in 2019 would be \$13,034. Based on data from the project site, on average the institution admits approximately 250 patients with a stroke annually (E. Larson, personal communication, November 1, 2019). In FY 2018-2019, months one to seven, the year-to-date (YTD) stroke readmission rate at the project site was 7.14% (E. Larson, personal communication, March 8, 2019). With a readmission rate of 7.14%, this is approximately 18 patients per year based on the annual admission rate. If the institution continues the project and sees a decrease in stroke readmissions, the site could potentially save up to approximately \$232,000 annually. When offset against the low cost of paper and educating nurses on targeted discharge education techniques, the potential savings remain monumental.

Additionally, targeted discharge teaching proved to be an efficient discharge education method. The DNP QI project revealed that not only does it not take any longer to perform, but nurses were also more prepared to answer patient-specific questions while performing targeted discharge education. Using the refrigerator appointment reminder card ensured the nurses had both a record of risk factors as well as follow-up appointments available prior to initiating targeted discharge education. The use of the targeted discharge education combined with the refrigerator appointment reminder card proved beneficial to the patient in improving understanding of the stroke process, knowledge of risk for repeat strokes, individual risks for a stroke, and attendance at follow-up appointments.

Practice Recommendations

The goal of this DNP QI project was to educate nurses on performing targeted discharge teaching. The overarching goal of the project was to improve patients' attendance at follow-up appointments. The targeted discharge teaching could be implemented on other units, focusing on patients who have had a stroke and have been downgraded to the medical floors. Additionally, the medical floors should begin using the refrigerator appointment reminder card, which notifies patients of their individual risks for a stroke as well as follow-up appointments.

An additional next practice recommendation is to compare the stroke readmissions during the targeted discharge education intervention with the readmission rate following targeted discharge education. The stroke coordinator should continue to keep track of each patient who is admitted and discharged for a stroke and identify if they attended a follow-up appointment with primary care and/or neurology. Every patient who discharges from the hospital should have a primary care follow-up scheduled prior to discharge. One practice change that would require system change is the integration of outside primary care providers with the institution so that follow-up at non-institution clinics can be tracked. Currently, when a patient is seen at a primary care provider outside the project site institution, the follow-up can only be tracked if the patient self-reports at their neurology follow-up.

The DNP QI project proved to be an effective and efficient method for targeted discharge education. The project site should consider an implementation for other comorbidities. The targeted discharge education can be modified using existing patient education materials. For example, persons with diabetes would be excellent candidates to receive targeted discharge education that focuses on risks for diabetic ketoacidosis, medication management and appropriate follow-up.

Final Summary

Readmissions are costly and are not covered under Medicare/Medicaid. Furthermore, readmissions are counterproductive to achieving the Triple Aim of improving satisfaction, improving health, and reducing the costs of healthcare. Following a stroke, cerebrovascular disease is the leading cause of readmissions within 30 days of discharge.

Patient education occurs throughout the healthcare system interaction. However, patient education is most earnest during the discharge process. During discharge education, patients are actively engaged to improve health literacy, which results in an improvement of desired outcomes. There is a paucity of research that focuses on discharge teaching effectiveness in preventing readmissions among persons who have experienced a stroke. Although the importance of discharge teaching was commonly discussed in the literature, few studies examined the outcomes of discharge education on improving attendance at follow-up appointments. However, the research suggested that discharge education is a vital component in a patient's health literacy. Health literacy contributes to overall compliance with the healthcare provider's recommendations.

In this DNP QI project designed to improve health literacy and attendance at follow-up appointments, nurses were educated on the importance of discharge teaching. Nurses were given a Likert scale survey before and after an educational session. This project assessed the understanding of nurses on targeted discharge teaching. The cost of the project was minimal and primarily included the cost of paper. Nurses were educated during their work hours, thereby not incurring extra hours or costs for the institution. The DNP QI project found that targeted discharge education is an effective and affordable method of discharge education.

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<http%3A%2F%2Flink.galegroup.com%2Fapps%2Fdoc%2FA423499097%2FAONE%3Fu%3Dncliveecu%26sid%3DAONE%26xid%3D587ab240>

Rennke, S., & Ranji, S. R. (2013). Hospital-initiated transitional care interventions as a patient safety strategy: A systematic review. *Annals of Internal Medicine*, 158(5 Pt 2), 433. doi:10.7326/0003-4819-158-5-201303051-00011

Rezapour-Nasrabad, R. (2018). Application of transitional care model in patients with chronic heart disease: A case-controlled intervention study - ProQuest. *Latin American Journal of Hypertension*, 13(3), 285. Retrieved from <https://search-proquest-com.jproxy.lib.ecu.edu/docview/2160345294?pq-origsite=summon>

Rushton, M., Howarth, M., Grant, M. J., & Astin, F. (2017). Person-centred discharge education following coronary artery bypass graft: A critical review. *Journal of Clinical Nursing*, 26(23-24), 5206-5215. doi:10.1111/jocn.14071

U. S. Department of Health and Human Services: Health Resources and Services Administration. (2011). *Quality improvement*. Retrieved from <https://www.hrsa.gov/sites/default/files/quality/toolbox/pdfs/qualityimprovement.pdf>

U. S. Department of Health and Human Services: Office of Disease Prevention and Health Promotion. (2014). Health literacy. *Healthy people 2020*. Retrieved from <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/health-literacy#1>

United States Department of Labor. (2019). CPI inflation calculator. Retrieved from <https://data.bls.gov/cgi-bin/cpicalc.pl>

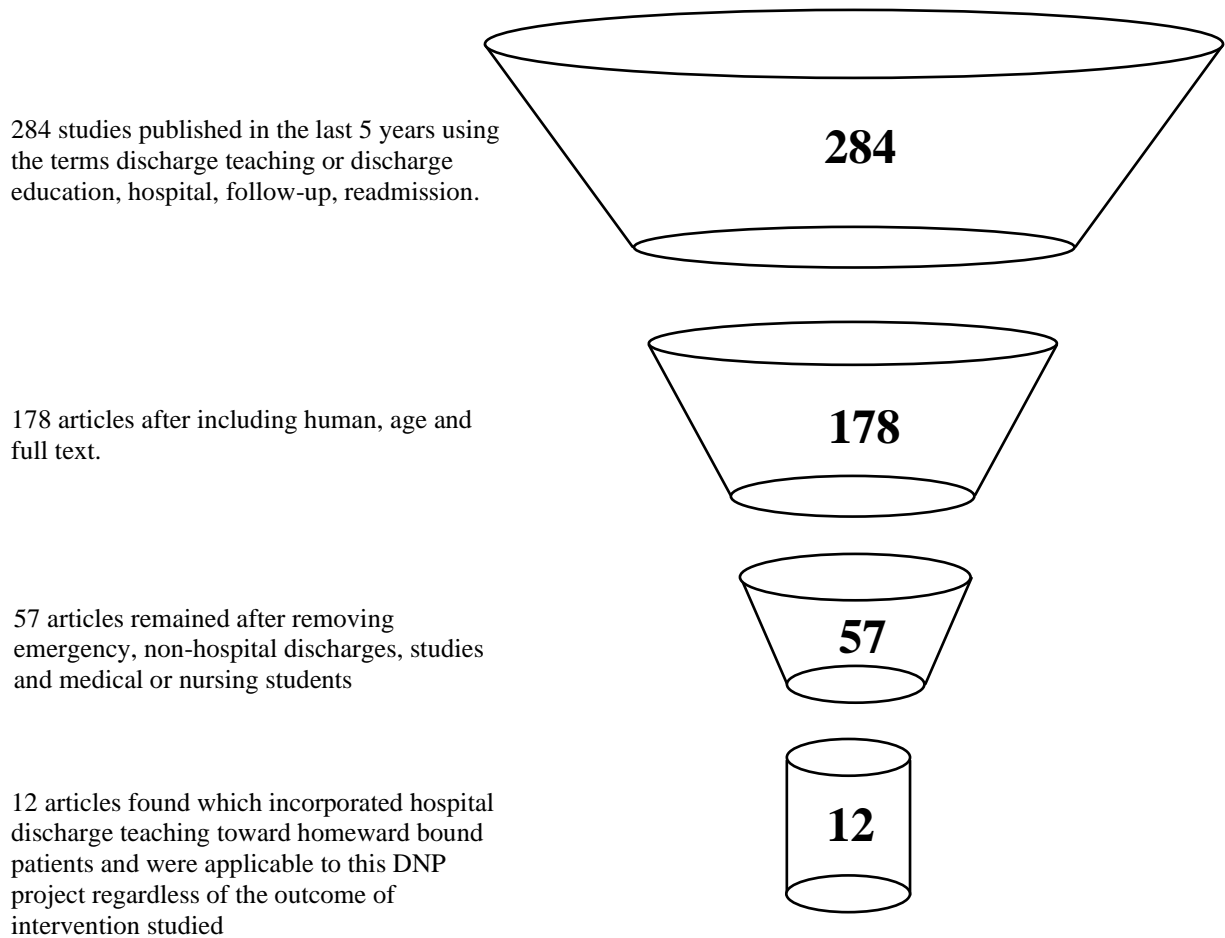
Whittington, J. W., Nolan, K., Lewis, N., & Torres, T. (2015). Pursuing the triple aim: The first 7 years. *The Milbank Quarterly*, 93(2), 263-300. doi:10.1111/1468-0009.12122

Wiltz-James, L. M., & Foley, J. (2019). Hospital discharge teaching for patients with peripheral vascular disease. *Critical Care Nursing Clinics of North America*, 31(1), 91-95.

doi:10.1016/j.cnc.2018.11.003

Appendix A

Literature Search Flow Diagram



Appendix B

Literature Review Matrix

Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings	Conclusion or Summary	Use of Evidence in EBP Project Plan
Atinyagrika Adugbire, B., & Aziato, L. (2018). Surgical patients' perspectives on nurses' education on post-operative care and follow up in northern Ghana. <i>BMC Nursing</i> , 17(1), 29-9. doi:10.1186/s12912-018-0299-6	VI	Planned hospital discharge education improved patient understanding of post-op care and follow-up as well as s/s of infection.	Nurses do not prepare patients adequately for discharge or provide proper education on caring for their condition at home.	Give nurses a set list of instructions to ensure all topics are covered during discharge education.
Denny, M. C., Vahidy, F., Vu, K. Y. T., Sharrief, A. Z., & Savitz, S. I. (2017). Video-based educational intervention associated with improved stroke literacy, self-efficacy, and patient satisfaction. <i>Plos One</i> , 12(3) doi:10.1371/journal.pone.0171952	III	A stroke education video during hospital discharge improved patients certainty in recognizing a repeat stroke from 35% to 54%.	Utilizing video education improved self-efficacy, stroke knowledge, patient satisfaction.	Stroke literacy is an important component of secondary prevention.
Hahn-Goldberg, S., Okrainec, K., Huynh, T., Zahr, N., & Abrams, H. (2015). Co-creating patient-oriented discharge instructions with patients, caregivers, and healthcare providers. <i>Journal of Hospital</i>	III	Using a form to create discharge instruction which are patient specific and take into account the patients' health literacy improves patient understanding.	Engaging patients in discharge teaching with a completed form for use at home improves patient understanding and provides a reference for	Written discharge instructions provide an on-going reference for the patient and caregiver.

Medicine, 10(12), 804-807. doi:10.1002/jhm.2444		94% of patients stated that the discharge instructions were usable for home.	the patient once they arrive home.	
Hahn-Goldberg, S., Jeffs, L., Troup, A., Kubba, R., & Okrainec, K. (2018). "We are doing it together"; the integral role of caregivers in a patients' transition home from the medicine unit. Plos One, 13(5), e0197831. doi:10.1371/journal.pone.0197831	II	Involving caregivers in discharge instructions increased patient satisfaction and understanding as well as caregiver involvement and understanding of the recovery process.	Patients and caregivers want to be involved together. Including the caregiver in discharge teaching improves the patient's ability to adhere to discharge instructions.	Include caregivers in discharge teaching
Kang, E., Gillespie, B. M., Tobiano, G., & Chaboyer, W. (2018). Discharge education delivered to general surgical patients in their management of recovery post discharge: A systematic mixed studies review. International Journal of Nursing Studies, 87, 1-13. doi:10.1016/j.ijnurstu.2018.07.004	I	Educational materials delivered as individualized interventions were found to be beneficial to patients as they actively responded to the teaching which improved health literacy and reduced readmissions.	The quality of discharge education influences patients' participation in their management of care post discharge from the hospital.	High quality discharge education is necessary to prevent readmissions and incorporate patients into their own care.
Knier, S., Stichler, J. F., Ferber, L., & Catterall, K. (2015). Patients' perceptions of the quality of discharge teaching and readiness for discharge. Rehabilitation	III	Utilizing a standardized discharge education process facilitated patients feeling empowered and engaged in	Patients reported improved perceptions of the quality of discharge teaching.	Standardized discharge process and education improved patient satisfaction.

Nursing, 40(1), 30-39. doi:10.1002/rnj.164		discharge planning and teaching process.		
Langford, D. P., Fleig, L., Brown, K. C., Cho, N. J., Frost, M., Ledoyen, M., . . . Ashe, M. C. (2015). Back to the future - feasibility of recruitment and retention to patient education and telephone follow-up after hip fracture: A pilot randomized controlled trial. <i>Patient Preference and Adherence</i> , 9, 1343. doi:10.2147/PPA.S86922	II	Using a 1 hour in-hospital education session, improved follow-up of care.	It is possible to engage older adults in the delivery of a face-to-face self-management and maintain follow-up through phone calls.	Older adults do well in a 1:1 setting of education and engagement.
Lin, R., Gallagher, R., Spinaze, M., Najoumian, H., Dennis, C., Clifton-Bligh, R., & Tofler, G. (2014). Effect of a patient-directed discharge letter on patient understanding of their hospitalisation. <i>Internal Medicine Journal</i> , 44(9), 851-857. doi:10.1111/imj.12482	II	A simple-patient directed level improved patient understanding of discharge recommendations by nearly 100%.	Including a discharge letter at discharge improved patients understanding of the reasons for their admission and the discharge recommendations.	Utilizing a single page patient letter or brochure can improve patients understanding of follow-up plans.
McCabe, J., Stevens, E., Stewart, F., & Paauwe-Weust, J. (2018). Preventing surgical site infection: Stopping infection requires effective discharge teaching. <i>American Nurse Today</i> , 13(4), 66.	VII	Effective discharge teaching cannot just focus on medical interventions but must also include self-care techniques and strategies to	Effective discharge education involves effective education materials and nurse's ability to communicate s/s of infection	Effective discharge teaching prevents adverse events after discharge.

		prevent adverse events.	and follow-up care needed.	
Rushton, M., Howarth, M., Grant, M. J., & Astin, F. (2017). Person-centred discharge education following coronary artery bypass graft: A critical review. <i>Journal of Clinical Nursing</i> , 26(23-24), 5206-5215. doi:10.1111/jocn.14071	I	Patient-centered individualized discharge teaching improves self-care and reduced anxiety and depression	Utilizing individualized education allows health professionals to understand each individual patient's needs and tailor discharge teaching to each patient's needs.	Effective discharge teaching focuses on each individual patient and their needs.
Schneider, M. A., & Howard, K. A. (2017). Using technology to enhance discharge teaching and improve coping for patients after stroke. <i>The Journal of Neuroscience Nursing : Journal of the American Association of Neuroscience Nurses</i> , 49(3), 152-156. doi:10.1097/JNN.0000000000000275	II	Using technology as an adjunct to discharge teaching improved patient's overall understanding and satisfaction with the discharge process and plan.	Use of technology in discharge education and follow-up improves patient's ability to cope following a stroke.	Patients should be considered for enrollment in a follow-up phone call after discharge. Additionally, including electronic education during the discharge process can improve coping skills.
Wiltz-James, L. M., & Foley, J. (2019). Hospital discharge teaching for patients with peripheral vascular disease. <i>Critical Care Nursing Clinics of North America</i> , 31(1), 91-95. doi:10.1016/j.cnc.2018.11.003	VII	Effective discharge teaching should focus on lifestyle modifications to prevent adverse events from PVD.	Effective discharge education can be accomplished with individualized teaching and program development.	Discharge teaching must focus on the patient's own co-morbidities and possible lifestyle modifications.
Literature used in project but not				

applicable to literature review				
<p>Agency for Healthcare Research and Quality. (2019). Section 4: Ways to approach the quality improvement process. Retrieved from https://www.ahrq.gov/caps/quality-improvement/improvement-guide/4-approach-qi-process/sect4part2.html#4c</p>	VII	Strategic, organized change focuses on clear goals and includes management to effect change.	QI projects are focused on a single problem of interest and can enjoy better success	A narrow focus in QI projects will improve outcomes.
<p>Alper, E., O'Malley, T. A., & Greenwald, J. (2017). Hospital discharge and readmission. In A. D. Auerbach, & J. A. Melin (Eds.), UpToDate. Retrieved from https://www.uptodate.com/contents/hospital-discharge-and-readmission</p>	VII	Discharge planning begins at admission and is an organized, planned process involving the multidisciplinary team, patients and their caregivers	Continuing hospitalization must be assessed continuously.	Appropriate discharges prevent readmissions
<p>Bambhroliya, A. B., Donnelly, J. P., Thomas, E. J., Tyson, J. E., Miller, C. C., McCullough, L. D., . . . Vahidy, F. S. (2018). Estimates and temporal trend for US nationwide 30-day hospital readmission among patients with ischemic and hemorrhagic stroke. JAMA Network Open, 1(4), e181190. doi:10.1001/jamanetworkopen.2018.1190</p>	IV	Reducing readmissions improves quality of care and saves money.	More than 90% of all 30-day stroke-related readmissions were unplanned	13% of patients who experienced a stroke required readmission for preventable causes.

Bushnell, C. D., Duncan, P. W., Lycin, S. L., Condon, C. N., Pastva, A. M., Lutz, B. J., . . . Rosamond, W. D. (2018). A Person-Centered approach to poststroke care: The COMprehensive Post-Acute stroke services model. <i>Journal of the American Geriatrics Society</i> , 66(5), 1025-1030. doi:10.1111/jgs.15322	VII	Comprehensive Post-Acute Stroke Services-Care Plan is used to record self-reported patient outcomes and improve evidence-based practice.	There is an immediate need for utilizing patient outcomes to improve care, transitions, and treatment.	Nurses performed targeted discharge teaching to improve care.
Caceres, J. W., Alter, S. M., Shih, R. D., Fernandez, J. D., Williams, F. K., Paley, R., . . . Clayton, L. M. (2017). Standardized physician-administered patient-centered discharge protocol improves patients' comprehension. <i>Southern Medical Journal</i> , , 359-362. doi:10.14423/SMJ.0000000000000642	II	The study utilized a patient-centered standardized discharge protocol with a physician performing the discharge education.	Significant improvements in patient understanding were reported.	The study utilized a patient-centered standardized discharge protocol.
Centers for Medicare & Medicaid Services. (2019). Hospital readmissions reduction program. Retrieved from https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientps/readmissions-reduction-program.html	VII			CMS does not cover readmissions for preventable causes or the same health issue.

Hirshman, K. B., Shaid, E., McCauley, K., Pauly, M. V., & Naylor, M. D. (2015). Continuity of care: The transitional care model. <i>The Online Journal of Issues in Nursing</i> , 20(3) doi:10.3912/OJIN.Vol20No03Man01	VII	The Transitional Care Model (TCM) is a top-tier, rigorously studied framework for managing the lives of elderly patients with multiple comorbidities.	The TCM improves quality of life in elderly patients.	Description of the Transitional Care Model used for theoretical framework
Institute of Medicine: Committee on Health Literacy. (2004). What is health literacy? In L. Nielsen-Bohlman, A. M. Panzer & D. A. Kindig (Eds.), <i>Health literacy: A prescription to end confusion</i> (pp. 31-58). Washington, DC: National Academies Press.	VII		Health literacy is effected by many factors, including reading literacy.	Definition of health literacy
Jackson, C., Shahsahebi, M., Wedlake, T., & DuBard, C. A. (2015). Timeliness of outpatient follow-up: An evidence-based approach for planning after hospital discharge. <i>The Annals of Family Medicine</i> , 13(2), 115-122. doi:10.1370/afm.1753.	V	Early follow-up is necessary, but timing varies based on condition.	Patients with multiple complex comorbidities are at high risk for readmission	Readmissions can be prevented by addressing complex comorbidities.
Melnick, B. M., & Fineout-Overholt, E. (2019). <i>Evidence-based practice in nursing & healthcare : A guide to best practice</i> (4th ed.). Philadelphia, PA: Wolters Kluwer.	VII			Utilized for defining levels of evidence

Naylor, M. D., Brooten, D. A., Campbell, R. L., Maislin, G., McCauley, K. M., & Schwartz, J. S. (2004). Transitional care of older adults hospitalized with heart failure: A randomized, controlled trial. <i>Journal of the American Geriatrics Society</i> , 52(5), 675-684. doi:10.1111/j.1532-5415.2004.52202.x	II	Implementation of the TCM on elderly patients.	Use of the TSM for patients with heart failure decreased readmissions, healthcare costs, and outcomes.	Use for defining theoretical framework for change.
Naylor, M. D., Brooten, D. A., Jones, R., Lavizzo-Mourey, R., Mezey, M., & Pauly, M. (1994). Comprehensive discharge planning for the hospitalized elderly. A randomized clinical trial. <i>Annals of Internal Medicine</i> , 120(12), 999. doi:10.7326/0003-4819-120-12-199406150-00005	II	Comprehensive discharge planning for elderly patients will improve the transitions of care.	Effective discharge planning facilitates higher quality transitions of care.	Use for defining theoretical framework for change.
Naylor, M. D., Hirschman, K. B., Toles, M. P., Jarrin, O. F., Shaid, E., & Pauly, M. V. (2018). Adaptations of the evidence-based transitional care model in the U.S. <i>Social Science & Medicine</i> , 213, 28-36. doi:10.1016/j.socscimed.2018.07.023	VII	The TCM is invaluable in preventing costly readmissions and providing appropriate care for elderly patients.	The article provided a thorough overview of the TCM and research performed by Naylor.	Use for defining theoretical framework for change.

Petteway, R., & Ledford, S. L. (2017). Public health report: Chronic diseases 2017. Retrieved from http://www.wakegov.com/humanservices/data/Documents/Chronic%20Disease%202017%20FINAL%201.3.17.pdf	VII			Statistics on the county of project site
Pilcher, J., & Flanders, S. (2014). Who is billy reuben? health literacy and patient education - ProQuest. Neonatal Network, 33(3), 150-154. Retrieved from https://search-proquest-com.jproxy.lib.ecu.edu/docview/1525750851?pq-origsite=summon	VII	Health literacy must be addressed while performing patient education.	Health literacy and patient education are inseparable	Health literacy has an impact on patient outcomes.
Puhr, M. I., & Thompson, H. J. (2015, August). The use of transitional care models in patients with stroke. Journal of Neuroscience Nursing, 47, 223-234. doi:dx.doi.org.jproxy.lib.ecu.edu/10.1097/JNN.000000000000143 Retrieved from http%3A%2F%2Flink.galegroup.com%2Fapps%2Fdoc%2FA423499097%2FAONE%3Fu%3Dncliveecu%26sid%3DAONE%26xid%3D587ab240	V	Systematic review detailed that the use of TCM is appropriate for stroke patients and that a higher level of studies need to be performed for globalization.	Evidence exists to support the use of TCM in stroke patients.	Implement TCM in discharge education
Rennke, S., & Ranji, S. R. (2013). Hospital-initiated transitional care interventions as a patient safety strategy: A systematic review. Annals of Internal	VII	Multiple transitional care models are evaluated and effectiveness reviewed.	Physicians can change the course of a patients transition of care by implementing	Overview of transitions of care models

Medicine, 158(5 Pt 2), 433. doi:10.7326/0003-4819-158-5-201303051-00011			transitional care models.	
Rezapour-Nasrabad, R. (2018). Application of transitional care model in patients with chronic heart disease: A case-controlled intervention study - ProQuest. Latin American Journal of Hypertension, 13(3), 285. Retrieved from https://search-proquest-com.jproxy.lib.ecu.edu/docview/2160345294?q-origsite=summon	II	Experimental study on the use of TCM in heart failure patients. Study showed that TCM overall improved quality of life.	TCM employed in patients with chronic illnesses can improve quality of life.	TCM
U. S. Department of Health and Human Services: Health Resources and Services Administration. (2011). Quality improvement. Retrieved from https://www.hrsa.gov/sites/default/files/quality/toolbox/pdfs/qualityimprovement.pdf	VII			Quality improvement toolbox
U. S. Department of Health and Human Services: Office of Disease Prevention and Health Promotion. (2014). Health literacy. Healthy people 2020. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-	VII			Definition of health literacy

resources/health-literacy#1				
Whittington, J. W., Nolan, K., Lewis, N., & Torres, T. (2015). Pursuing the triple aim: The first 7 years. <i>The Milbank Quarterly</i> , 93(2), 263-300. doi:10.1111/1468-0009.12122	VII	Evidence of the Triple Aim in its first years of implementation.	Review of the Triple Aim successes and improvements.	Understanding of Triple Aim goals
Posten, K. M. (2018). Reducing readmissions in stroke patients. <i>American Nurse Today</i> . Retrieved from https://www.americannursertoday.com/reducing-readmissions-in-stroke-patients	V	Explanation and evaluation of clinical trials for reducing readmissions and follow-up care.	Review of importance of efforts to reduce readmissions.	Cost of care impact of strokes.
Johnson, B. H., Bonafede, M. M., & Watson, C. (2016). Short- and longer-term health-care resource utilization and costs associated with acute ischemic stroke. <i>ClinicoEconomics and Outcomes Research</i> , 8, 53-61. doi: http://dx.doi.org/10.2147/CEOR.S95662	III	Cost of care analysis of lifetime stroke using retrospective cost analysis.	Review of acute ischemic stroke costs of care in hospital setting.	Cost of admission for a stroke.

Hines, A. L., Barrett, M. L., Jiang, H. J., & Steiner, C. A. (2014). Statistical brief # 172. <i>Agency for Healthcare Research and Quality</i> . Retrieved from https://www.hcup-us.ahrq.gov/reports/statbriefs/sb172-Conditions-Readmissions-Payer.pdf	VII	Healthcare brief from AHRQ regarding conditions which have the highest readmission rate.	Overview of hospital readmissions for all causes.	Stroke readmission rate
United States Department of Labor. (2019). CPI inflation calculator. Retrieved from https://data.bls.gov/cgi-bin/cpicalc.pl	VII	U.S. Dept. of Labor Inflation Calculator		Inflation calculator

Appendix C
Project Site Approval

April 3, 2019

To Whom It May Concern:

We at [REDACTED] Intensive Care Unit and Neuro Sciences Unit (DRaH ICU/NSU) have reviewed Sandra Leggott's DNP project titled "Transitions of Care: Implementation of Standardized Discharge Teaching by Nurses to Prevent Readmission in Stroke Patients". Mrs. Sandra Leggott has organizational support and approval to conduct her project within [REDACTED] ICU/NSU. We understand that for Mrs. Sandra Leggott to achieve completion of the DNP Program, dissemination of the project will be required by East Carolina University which will include a public presentation related to the project and a manuscript submission will be encouraged. Our organization has deemed this project as a quality improvement initiative and not requiring institutional IRB review.

Thank you,

[REDACTED]

[REDACTED], MSN, RN, CNL, CCRN

Nurse Manager of Operations, ICU & NSU

Appendix D

DNP Project Budget

	Unit Cost	Units Purchased	Line Cost
Card Stock	13.69	2	\$27.38
Black Ink cartridge	3.99	1	\$3.99
Incentive gift card	25.00	1	\$25.00
Coffee gift cards	10.00	4	\$40.00
Candy bags	5	2	\$10.00
Total			\$92.68

Appendix E

Patient Refrigerator Appointment Reminder Card

F o r M y H e a l t h**Attend These Follow-Up Appointment(s):**

Date: _____

Time: _____

Primary Care: _____

Date: _____

Time: _____

Neurology: _____

My Stroke Risk Factors:**Things I can change:**

- ☐ Hypertension
- ☐ Smoking
- ☐ Diabetes
- ☐ Diet
- ☐ Exercise
- ☐ Obesity
- ☐ High Cholesterol

Things I cannot change:

- ☐ Age
- ☐ Race
- ☐ Gender
- ☐ Family History
- ☐ Previous stroke, TIA

~ Intensive Care Unit & Neurosciences Unit

Advanced Thrombectomy-Capable Stroke Center

~ Stroke Program Coordinator ~ _____

Appendix F

ECU Approval of QI Project – Non-IRB

Below is a summary of your responses

[Download PDF](#)

Quality Improvement/Program Evaluation Self-Certification Tool**Purpose:**

Projects that do not meet the federal definition of human research pursuant to 45 CFR 46 do not require IRB review. This tool was developed to assist in the determination of when a project falls outside of the IRB's purview.

Instructions:

Please complete the requested project information, as this document may be used for documentation that IRB review is not required. Select the appropriate answers to each question in the order they appear below. Additional questions may appear based on your answers. If you do not receive a STOP HERE message, the form may be printed as certification that the project is "not research", and does not require IRB review. The IRB will not review your responses as part of the self-certification process.

Name of Project Leader:

Sandra Leggott

Project Title:

Transitions of Care: Improving Discharge Teaching in Stroke Patients

Brief description of Project/Goals:

Due to CMS requirements to prevent hospital readmissions, hospitals are tasked to focus on finding ways to prevent readmissions. One intervention proving successful for individuals who have experienced a stroke is improving patient literacy on strokes. The purpose of this Doctor of Nursing Practice (DNP) quality improvement (QI) project is to educate nurses on proper discharge education in

stroke patients to ensure patient understanding of strokes and improve attendance at follow-up appointments to prevent readmission. According to the HCAHPS results collected by the project site for the last quarter of 2018, satisfaction with care transitions at this institution was 53.7%, which falls short of the target goal of 62.3%. In addition, 13% of individuals who experienced a stroke between December 2018 and February 2019 did not attend their scheduled follow-up appointment. The purpose of this project was to educate nurses on a standardized format for patient discharge education and to provide standardized discharge teaching materials to each patient who experienced a stroke, whether ischemic or hemorrhagic. This project focused on educating nurses on the importance of standardized discharge teaching and provided nurses with a standardized teaching format. Materials included a checklist for nurses on patient education and a patient brochure for ischemic and hemorrhagic strokes. Standardized discharge instructions improve patient health literacy and compliance with follow-up appointments. Prior to this project, patients received an ischemic or hemorrhagic stroke packet on admission that detailed the signs and symptoms of a stroke. Nurses were not trained to review the stroke packet with the patient during discharge education. As a part of discharge education, nurses reviewed the "After Visit Summary" (AVS) with patients, which briefly detailed the signs and symptoms of a stroke, but no education was provided to nurses for points of emphasis on discharge teaching. Nurses discussed upcoming follow-up appointments listed within the AVS with the patient, however the nurses were not educated on teaching the patient the importance of adherence with the follow-up appointments. This project will assess nurses' discharge education understanding and ability both pre- and post-intervention. To assess nurses' each nurse will take a survey of understanding prior to receiving the project teaching on discharge education. Each nurse will then complete the same survey following receiving the education offered in this project. The project will evaluate nurses' understanding of performing discharge teaching and understanding of the importance of proper discharge teaching. This will be done by completion of pre- and post- testing with a comparison of the responses. No data on specific nurses will be collected and the testing will be anonymous through Qualtrix surveys. The outcome measured is nurses' understanding of proper discharge teaching pre- and post-intervention. Using a Likert scale, nurses will be assessed on their knowledge prior to the electronic training. Following the training, nurses will be assessed using the same Likert scale. Attendance at follow-up appointments will continually be monitored throughout the project with a goal of increasing attendance from 77% to 95%. The only data which will be collected on patients is follow-up appointment attendance. No patient's will be contacted as a part of this project.

Will the project involve testing an experimental drug, device (including medical software or assays), or biologic?

- ☐ Yes
☒ No

Has the project received funding (e.g. federal, industry) to be conducted as a human subject research study?

- ☐ Yes
☒ No

Is this a multi-site project (e.g. there is a coordinating or lead center, more than one site participating, and/or a study-wide protocol)?

- ☐ Yes
☒ No

Is this a systematic investigation designed with the intent to contribute to generalizable knowledge (e.g. testing a hypothesis; randomization of subjects; comparison of case vs. control; observational research; comparative effectiveness research; or comparable criteria in alternative research paradigms)?

☐ Yes

☒ No

Will the results of the project be published, presented or disseminated outside of the institution or program conducting it?

☐ Yes

☒ No

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project. 6/20/2019

Appendix G

Pre- and Post- Implementation Evaluation Tool

Create a unique 4 digit identifier using your 2 digit age and the last 2 digits of your phone number. This number will not be used to identify you but will be used to enter you in the incentive drawing for completion of the project.

☐ 2 digit age, last 2 digits of phone number

How old are you?

☐ Age in years

How many years have you been a nurse?

☐ Experience in years

Gender?

☐ Male

☐ Female

Please answer the following questions, using a scale of 1 to 5, where 1 means completely disagree and 5 means completely agree.

Click to write the question text

	Please answer the following questions related to nurses.				
	Completely Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Completely Agree
Nurses have a vital role in patients future compliance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nurses must impress on the patient the need for follow-up care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nurses can prevent repeat strokes through discharge education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nurses have the ability to help this institution achieve the Triple Aim.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nurses are the final voice in a patient's life before they transition home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

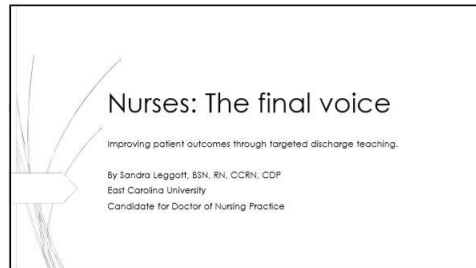
Click to write the question text

	Please answer the following questions based on patients				
	Completely Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Completely Agree
Patients must understand the importance of attending follow-up appointments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients need to know their individual risks for a stroke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients need to be taught the warning signs/symptoms of a stroke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Patients who have had a stroke are at a high risk for a repeat stroke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

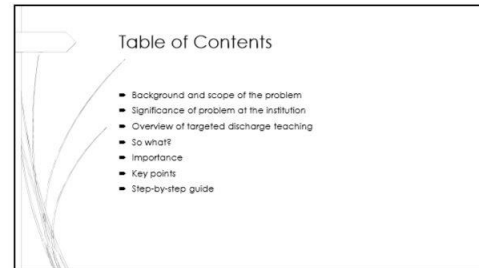


Appendix H

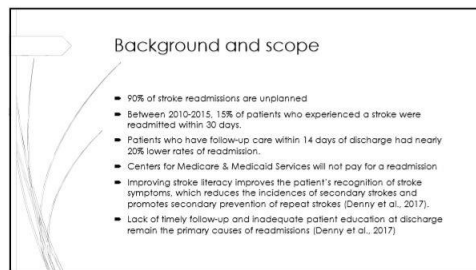
Nurses Education PowerPoint®



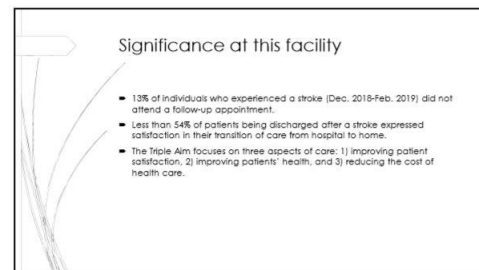
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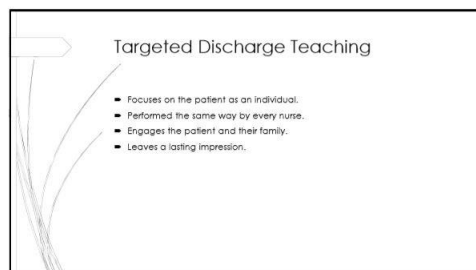
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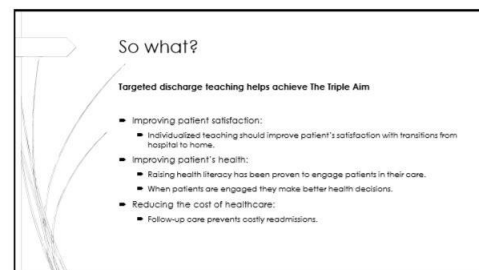
3



4



5



6

Importance

- Nurses have a vital role in patients future compliance.
- Nurses must impress on the patient the need for follow-up care.
- Nurses can prevent repeat strokes through discharge education.
- Nurses have the ability to help this institution achieve the Triple Aim.
- Nurses are the final voice in a patient's life before they transition home.

7

Key teaching points for targeted discharge teaching

- Importance of attending follow-up appointments
- Understanding of individual risks for a stroke.
- Recognize the signs/symptoms of a stroke.
- Risk for a repeat stroke.

8

Performing targeted discharge teaching step-by-step

- Complete refrigerator appointment reminder card at bedside with patient and family.
- Stress the importance of attending follow-up appointments.
- Identify individual stroke risk factors with the patient and fill out on refrigerator appointment reminder card.
- Educate patient on changing modifiable risk factors.
- Using the After Visit Summary, educate the patient on the signs/symptoms of a stroke.

9

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Appendix I

Pre- and Post- Education Qualtrics® Responses

